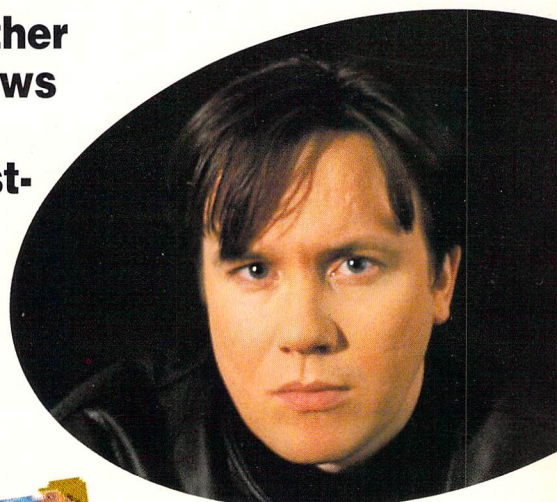


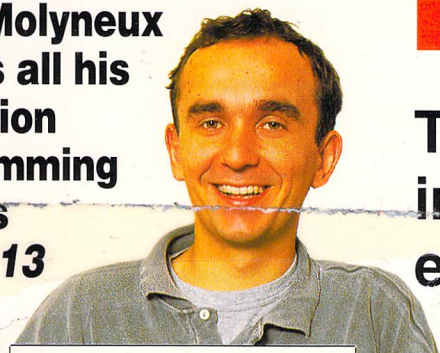
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Eric Matthews
picks his
Top Ten best-
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Get moving!

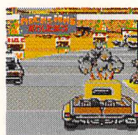
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Peter Molyneux
reveals all his
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Transform your animation ideas
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unique and
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ST FORMAT COVER DISK 21

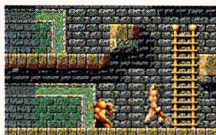


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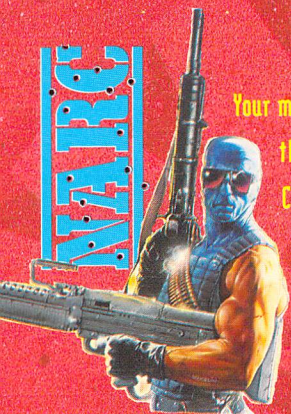
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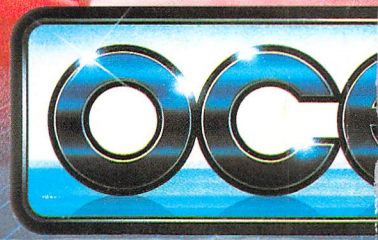
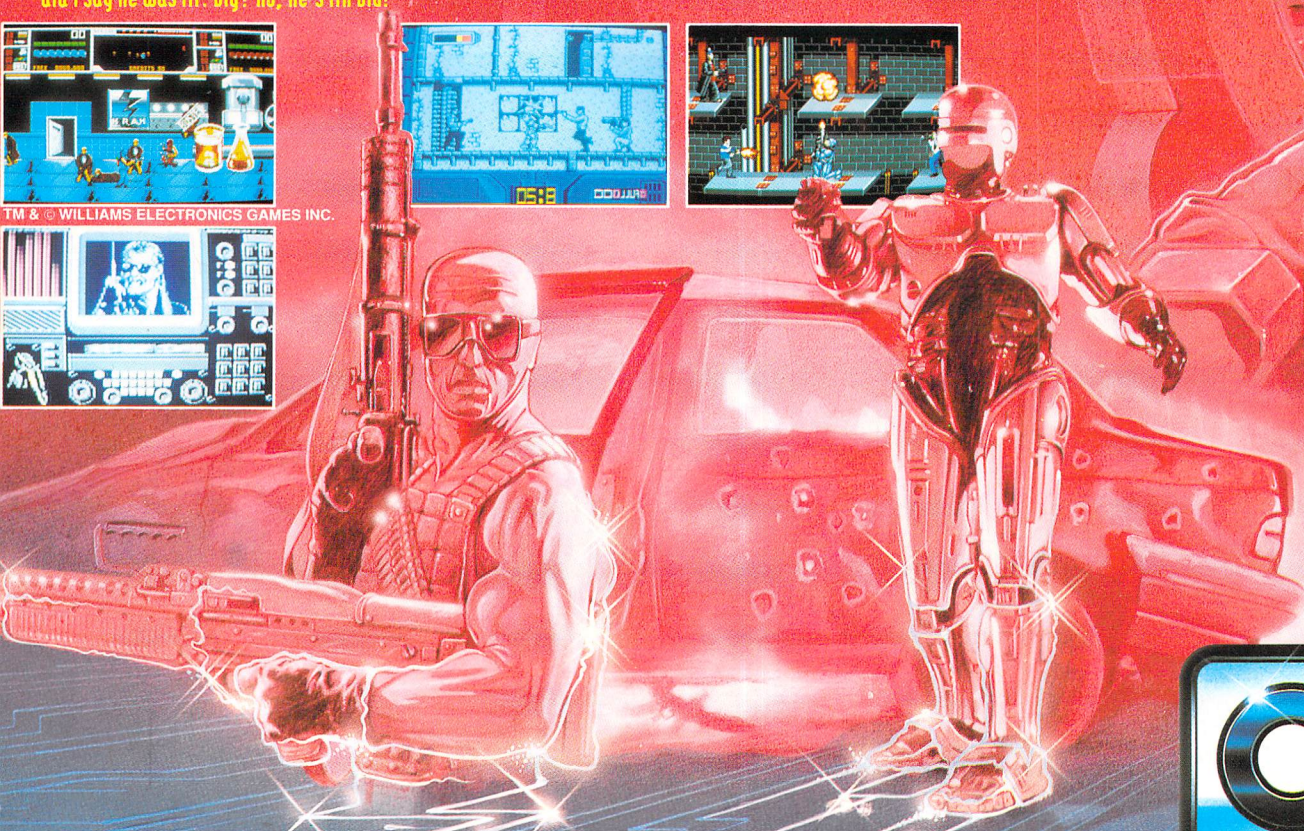
TOTAL



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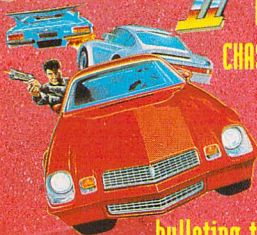


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ST FORMAT

ABC July-December 1990 55,455

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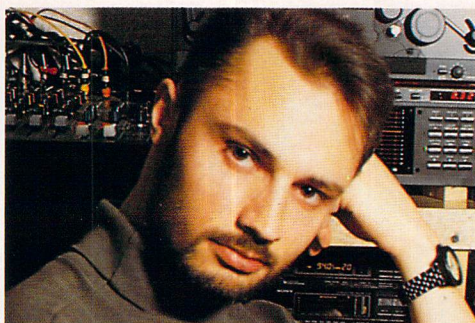
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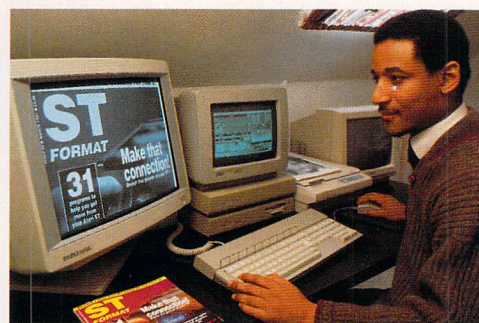
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106 Composer Neil Palmer reveals how the pros put music together



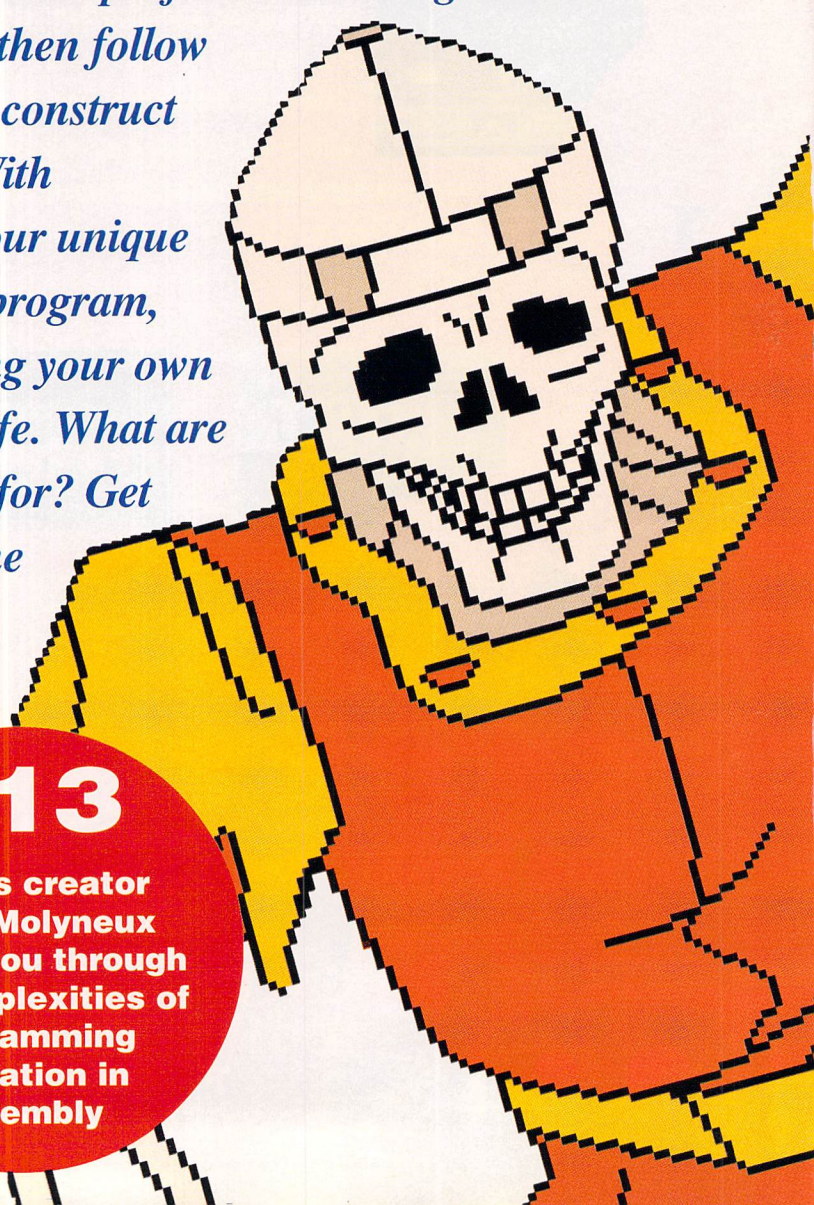
49 Make masterpieces of your pics with this new re-touching package

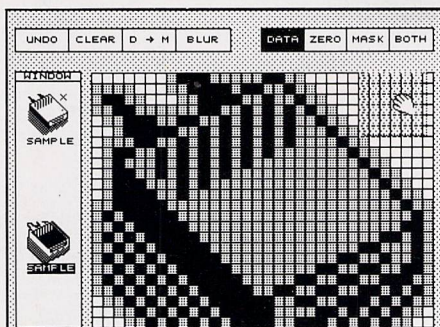
Animation overload!

In this animation-crazy issue we reveal how you can bring the wonderful world of Disney to your ST. Read how the professionals design their animations, then follow their help to construct your own. With Animaster, our unique Cover Disk program, you can bring your own pictures to life. What are you waiting for? Get moving in the direction of page 22

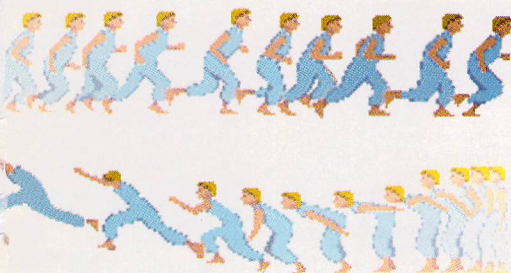
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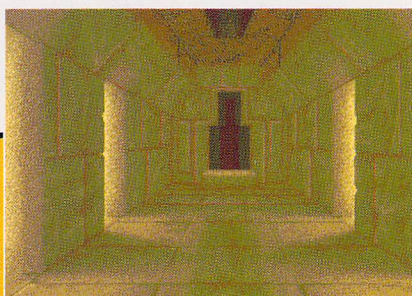




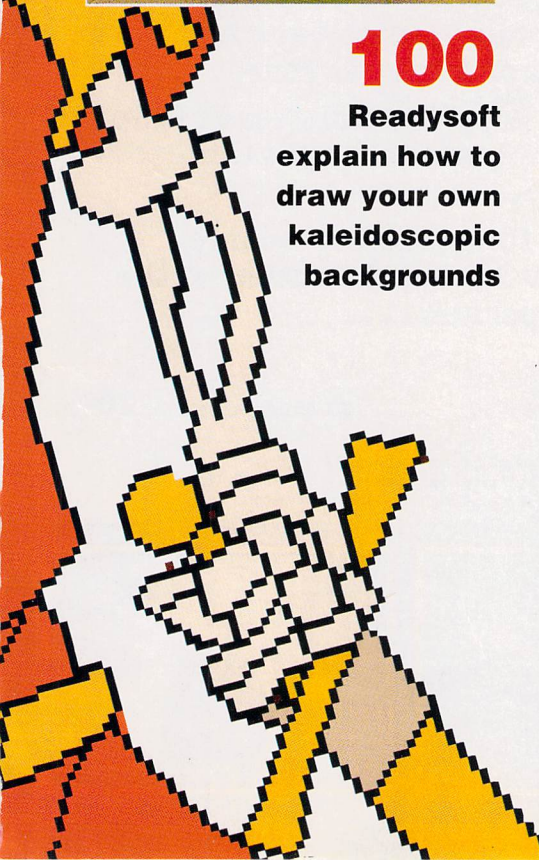
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FREE!

32-page buyer's guide with this issue

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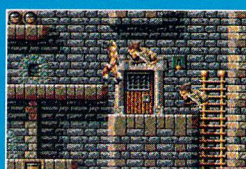
UNBEATABLE!

Fully playable demos of two top games
and a unique animation program

MOONSHINE



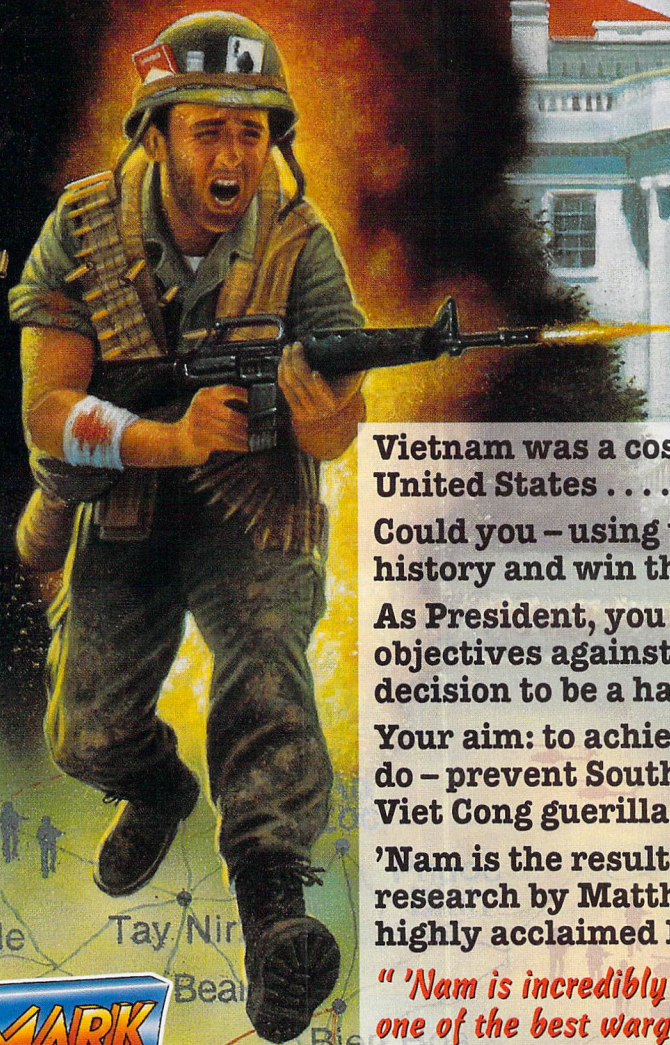
GODS



On this month's action-packed Disk we bring you a stomach-churning demo of *Hillbilly Moonshine Racers*; *Gods*, the Bitmaps' latest manic platform game; and our exciting animation designer, *Animaster*. **PLUS:** sprites and back-grounds from Domark's *Prince of Persia* for you to play with, a *GFA Basic* animation program and more *GFA Basic* tutorial files

'NAM

★ 1965-1975 ★



Vietnam was a costly disaster for the United States . . .

Could you – using the same resources – rewrite history and win the war America lost . . . ?

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"'Nam is incredibly accurate... (and) definitely rates as one of the best wargames in years" CU Amiga Screenstar **90%**

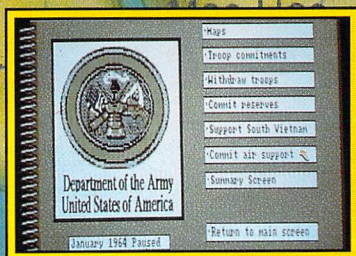
Programmed and designed by: Matthew Stibbe

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Available on: Amiga, Atari ST, IBM PC 3.5" & 5.25" & Apple Macintosh Amiga Screenshots

DOMARK



THE ST FORMAT SUCCESS STORY

ST FORMAT, Britain's best-selling magazine for ST owners, continues to go from strength to strength. The latest official circulation figures, just released by the independent Audit Bureau of Circulations, show that a palindromic 55,455 of you have got the good sense to buy the only ST magazine that counts.

Not only is **FORMAT** still the market leader, but its circulation is almost 50% – yes, 50% – better than any other ST magazine's. (What other ST magazines?) While the rest of Britain has been sinking into recession, **FORMAT's** circulation figure has risen a remarkable 10% on our last circulation audit, which means we've gained well over 5,000 new readers during the period July to December 1990. What's more, our bumper December issue actually sold over 66,700 copies, suggesting that the trend is still rising.

So whether you're one of the thousands of newcomers (*welcome!*) or a veteran, stick with us – you ain't seen nothin' yet!

STE price cut imminent?

by Andrew Hutchinson

Reliable sources within the home micro industry have told **ST FORMAT** they expect a substantial price cut on the STE. This would mean the likely phasing out of the older STFM and a switch in emphasis in advertising and bundled packs.

Peter Staddon, Atari's Marketing Manager, was tight-lipped about the price cut, but made the following statement:

"In the first quarter of this year there is no intention to change the range or pricing structure of the ST range. This will continue to be as indicated in the January 1991 retail price list.

"As far as specifics regarding range policy, new product introductions and pricing policy are concerned, Atari UK will be holding a press conference in London on

March 12th, at which we will be presenting our 1991 plans. These plans include the introduction of both new products and new packs, none of

which will be available before late April."

This statement suggests that Atari will also launch the Mega STE on that date, shifting emphasis completely onto the advanced STE range. Leading retailers didn't want

to comment until Atari confirmed the price cuts, but two of the largest retailers made some predictions:

- The STE price cut may not be as much as the rumoured £100;
- The price cut will be made possible by selling the machine on its own, with no software but with a TV lead and joystick, for about £320;
- There may be a £400 STE MIDI pack containing some sequencing software, and possibly a £400 games pack containing ten games, two joysticks and a cheats book.

"The STE may sell for £320 – with TV lead and joystick but no software"



■ Is the processing power of the STE soon to cost you a lot less?

Sample alternative

There are five sound samplers available for the ST, and now a new contender enters the fray, this time from Pandaal Marketing. **DAATA-sound** plugs into the cartridge port of your ST and works in colour and mono resolutions.

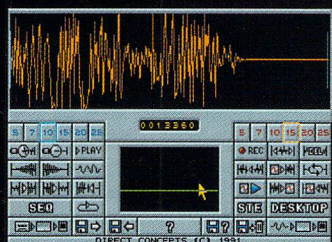
The unit can sample and play back at 5, 7.5, 10, 15, 20 and 25kHz and includes a built-in sequencer which can hold up to 18 samples. The program is MIDI compatible and playback is through a TV or monitor.

The sample editing software itself enables you to magnify, fade,

echo, flip, cut, copy, splice, plaste, filter, amplify, soften and compress the sound. When playing back you can bend the pitch, loop the sound or play it in reverse. With an STE (yep, STE owners come out ahead with this package's special STE facilities) you can also change the volume, the bass and the treble.

Ab Pandaal told **ST FORMAT** that their sampler has great advantages over other comparable samplers. "There's a realtime echo mode," he said, "and it's got a very accurate and intuitive sequencing operation. The fact that it works in all resolutions is obviously a big advantage, and it also works with all STs." He added that **DAATA-sound** is an entry-level sampler, planned to be one of a family of forthcoming samplers.

DAATA-sound retails at £39.99 and is available now, from Pandaal Marketing, 44 Singer Way, Woburn Road Industrial Estate, Kempston, Bedford, MK42 7AF, ☎ 0234 855666.



■ The sample editing features of **DAATA-sound** compare well with other samplers available

A Duck Tail

In what could well be the licencing coup of the year, Entertainments International have acquired the rights to market Disney software. EI are prime movers on the software scene, though their name might not be familiar to most ST owners. *Team Yankee*, *Dragon's Lair*, *Space Ace*, *Gazza 2* and *Crazy Cars* were some of EI's previous titles.

The software being launched soon is educational, utilising the well-known Disney characters in a fun format aimed at kids between the ages of two and five.

■ *Donald's Alphabet Chase* is designed with the idea of teaching children the alphabet and keyboard skills at the same time.

■ Identifying colours and recognising shapes is the theme behind *Goofy's Railway Express*. The idea is to

guess the shapes produced by the smoke coming from a train.

■ *Mickey's Runaway Zoo* teaches numeracy. Animals have escaped from the zoo and by pressing the appropriate number you can reveal the animals' hiding places.



■ "Hello, everybody. My name's Mickey Mouse and I've got a big surprise waiting for you inside this caravan. Come along, little duckies!"

NET £25 OF SOFTWARE – FREE! SEE PAGE 142

DIGITISE YOURSELF

One of the most popular digitising packages for the ST is Rombo's *VIDI-ST*. This Scottish company have recently launched a full colour version which goes by the name of *Vidichrome-ST*.

The package works by taking red, green and blue maps of an image and then combining the three to produce a full colour image. The hardware can work with a video camera or recorder, thus making colour digitising a realistic option for ST owners. *Vidichrome-ST* costs £179. Rombo Ltd, 6 Fairbairn Road, Kirkton North, Livingston, Scotland, EH54 6TS, ☎ 0506 414631. Watch for the full review in *ST FORMAT* soon.

SUPERSONIC CONCORDE+

Full Circle Technologies continue their support for the emulation market with a new PC AT emulator pack. *Concorde+* has the Vortex ATonce v3.5 emulator at its heart and can be purchased with a choice of extra hardware or on its own as part of an introductory offer:

- ATonce and a half MByte memory upgrade for £285
- ATonce and an external 3.5" floppy drive for £275
- ATonce and both the RAM upgrade and the external floppy drive for £329
- ATonce and MS-DOS 3.5 for £259
- ATonce and a Vortex Datajet 40MByte hard drive for £599
- ATonce and a 40MByte slimline hard drive for £535

Full Circle Technologies are at 133a Parrock Street, Gravesend, Kent, DA12 1EZ, ☎ 0622 677173.

MIDI OF THE ROAD MUSIC

The MIDI song market seems to be going from strength to strength. As *FORMAT* reports this month (see page 110), companies can supply complete MIDI files of popular songs, enabling ST owners with sequencing software to see how songs are created.

The latest company to offer this service are Zone Distribution, who are distributing song files created in America in a choice of formats.

All musical tastes are catered for, classical to rock. ST MIDI fans can choose either an individual song or a selection of songs in the same style. Zone tell us that they have over 1,000 titles in their catalogue. They can be contacted at 5 Abbeville Road, London, SW4, ☎ 081 766 6564.

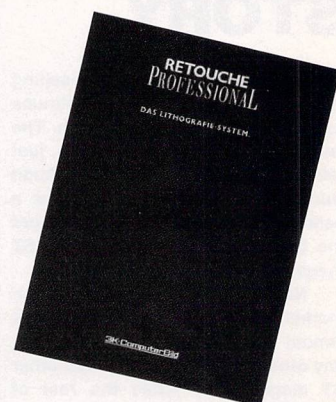
Colour retouching arrives on the ST

There is a colour version of *Retouche*, the monochrome digital retouching package from Germany, in the pipeline, according to Copycare Services, the British distributors of the program. The monochrome version is reviewed on page 49 of this very issue, and Copycare tell us that the Professional version is also almost ready.

The *Colour Retouche* boasts the kinds of features which would make owners of lesser micros wince. Full four-colour separation and linotronic output via *Postscript* files are just

two of its powerful features. The colour version of the program should work in the same manner as its monochrome relation, namely by operating on tones, shades and colours, rather than on pixel data. For more information contact Copycare Business Services ☎ 081 679 7307 – and watch for the complete review in *ST FORMAT* soon.

■ The forthcoming *Colour Retouche* promises to enable you to edit, twist, reformat, slant, merge, water down and generally alter scanned or digitised images



A musical Four Minute Warning?

MIDI software houses seem to be springing up all over the place. The latest is a company called Four Minute Warning, distributing previously unavailable American programs as well as their own software.

FileMaster is an ST-based sampler loader program, reinforcing the ST's reputation as the professional musician's machine of choice. *FileMaster* supports the Akai X-7000 and S-700 2.8 inch samplers and Roland's S-10 and S-220 machines. Run the program with these samplers and you can quickly and easily locate the appropriate sample – and if you've got an STE you can even "audition" it via the STE's DMA audio

sockets. When you've found the right sample you simply send it via MIDI to your sampler. *FileMaster* costs £20.

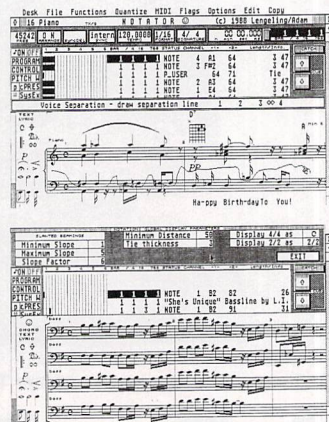
Freebase is a database for samples. It can categorise sound samples through the use of an "expert" system. These can then be sorted and either displayed on screen or printed. A "hunt/jump" system enables the user to quickly locate the right sample using specific search criteria. The software works in conjunction with Akai S-900, S-950, S-1000, S-1000PB, S-1000KB,

"Sampler loaders, sample databases and editing programs from America are now available here"

S-1100 samplers or Roland S-330 or S-550 samplers. No price has been fixed yet.

Mississippi Software have been producing specialised MIDI programs in the States for many years. Their range is now available through Four Minute. Editing programs for the Roland U-110, U-220, Alpha Juno Range, Ensoniq ESQ-1/ESQ-m and Yamaha DX-7 sequencers and synthesizers should be available by the time you read this.

Four Minute Warning can be found at 298 Horbury Road, Wakefield, West Yorkshire, WF2 8QX, ☎ 0924 386527.



■ *Freebase* isn't when you move into a squat or simply decide to stop paying rent, it's a brand new sample library program

Sound alternative

STFM owners who are jealous of their stereo STE owning chums can now join the hi-fi blasting crowd. Back in issue 19, *FORMAT* brought you news of the TCB stereo sound cartridge, designed to attach to the ST via the Centronics printer port, and now there's another add-on cartridge available, this time from Microdeal.

The Playback cartridge is a stereo sound cartridge with two phono leads coming from the side of it. The unit can be used with Microdeal's *Quartet* music sequencing software to provide four channel stereo sound. Included in the package is a drumbeat program

which enables you to store up to 50 patterns in memory, with each of those patterns consisting of up to 99 events. A converter program on the disk enables you to utilise the stereo sound in your *GFA Basic*, *Hisoft Basic* or assembly language coding.

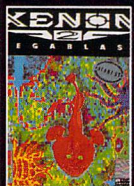
Playback works with an ST, STF and STFM and retails at £29.95. It's available from Microdeal, PO Box 68, St Austell, Cornwall, PL25 4YB, ☎ 0726 68020. The TCB cartridge is from MPH Software, ☎ 0603 503382. Don't miss the full review of both these cartridges, head-to-head, in next month's issue.

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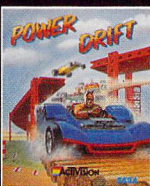
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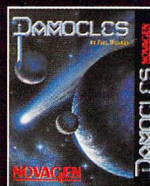
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EVEN MORE MEECES

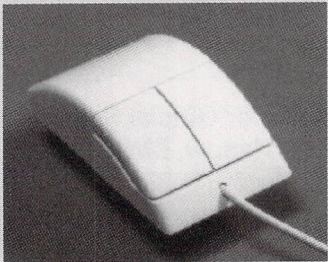
Toiling ST owners, cast off your old, sluggish Atari mouse and start enjoying GEM again. Yep, another mouse for the ST hits the market, this time from Pandaal Marketing. Their DAATAmouse is a very attractive (if that's the right word) mouse which has been ergonomically designed to sit under your hand with a bit more comfort than Atari's neolithic effort.

DAATAmouse operates at a resolution of 280 dpi and includes not one but two microswitch buttons guaranteed to click their little hearts out for one million cycles (but who's counting?). Unlike Atari, the makers of this mouse have realised that we need somewhat more than five inches of mouse lead in order to move that adorable piece of plastic around the table top. With a nice long lead, this costs £39.99 from Pandaal Marketing Ltd, 44 Singer Way, Woburn Road Industrial Estate, Kempston, Bedford, MK42 7AF, ☎ 0234 855666.

■ Contriver have also got a couple of damned attractive mice available for the palm-sore ST owner. Their Multi-DPI mouse can work at any resolution between 100 and 800 dpi. In fact this kind of mouse is just the kind of thing that the DTP community has been crying out for. Detailed work is far easier if you can change the resolution.

The other mouse is the Five in One, which apparently can be used on a variety of machines (but what other machines are there?).

■ For details of other mice worth considering, as well as a vast range of hardware and software for your ST, see this issue's special Buyer's Guide supplement



■ The DAATAmouse at the top prepares to do battle with the two Contriver contenders. I love those meeces to pieces!

Showing out

Summer must be on the way. There are three computer shows already lined up for May and July, with more in the pipeline. The All Formats Computer Fair convenes for the eighth time at The New Hall of the Royal Horticultural Society in Westminster, London, on 23 March. Tickets are £3, and the nearest tubes are Victoria, Pimlico and St James Park. More info on ☎ 0225 868100.

The 16-bit Show reconvenes for the fourth time at the Novotel Hotel, Hammersmith, in London. The event

takes place on the weekend of 12, 13 and 14 July. If the last event is anything to go by, there should be a range of new software and hardware making its debut at the show. More info on ☎ 081 549 3444.

The Computer Shopper Show, that box-shifter's paradise, is back again. This time the event takes place at Alexandra Palace on the weekend of 10, 11 and 12 May. Certainly the place to pick up those heavily discounted bargains. More info on ☎ 061 480 9811.



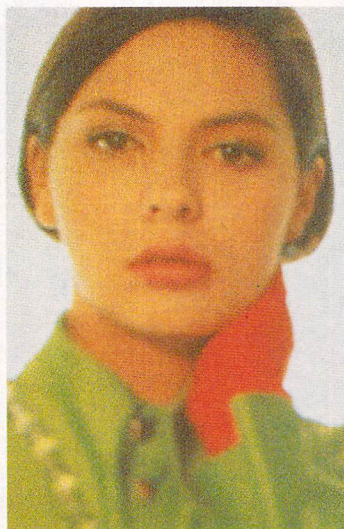
■ Join the cronging throwds at the All Formats Computer Fair and you can brush shoulders with owners of lesser micros

Motormouth connection

Magic Pockets is the name of Renegade's next release after *Gods*. A cut-down version of the game appeared recently on the kiddies' TV show *Motormouth*, but Renegade are insisting that the full thing will be heaps better.

The Bitmap Brothers programmed a special version of the game for the show which viewers could play over the phone. This cutesy platform game sets you off on a trail to collect objects such as special shoes or magic clothes which can be put to use during the action. The more you load up your bottomless pockets, the harder the game becomes.

Music for *Magic Pockets* was written by none other than the gorgeous Betty Boo. Renegade tell us there will be a full ST version of the game available in the summer. Can't wait!



■ Betty Boo did the do - er, the music for the new *Magic Pockets*

BAT music

If you purchased the superb *BAT* from UBI Soft, then you're bound to be interested in a follow-up program for the sound card which came with the game.

The program, called *Music Master*, makes use of the 10 voices available with the card. The sounds run at 15kHz and have an 8-bit resolution. MIDI control is included in the package, so a keyboard or synthesizer can be controlled by the program.

Sound waves can be created from within the program by using the mouse. These can then be modified using graphic potentiometers. Filters can treat the sounds to a reverb, a tuning delay or some vibrato. *Music Master* should be available by the end of September. UBI Soft can be contacted on ☎ 0252 860299.

Vectors in

Vector graphics have arrived on the ST in *Didot*, a new line-art package. They are superior to bitmaps because vector images can be scaled to any size while retaining all their quality.

Didot combines CAD and line-art, and should be invaluable for DTP users and designers. The package includes support for a large array of output devices, including the industry standard *Postscript*.

Lines and bezier curves of any thickness can be drawn. Fills containing any tint or predefined pattern can be soaked into images. Objects can be stretched, rotated, twisted or distorted with vector mapping. Bit-mapped images can be traced to produce a scaleable vector form, and the program boasts dizzying speed. Copycare Business Services (☎ 081 679 7307) will be distributing *Didot* in this country in May for £345.

Orchestral ST

The ST's (thoroughly deserved) domination of the MIDI computer market is almost total. The classical music world has traditionally shied away from the technology on the grounds that it's not "real" music, but the times (as they say) are a-changin'. Alastair Burton, a student at the Royal College of Music (RCM) in London, has just completed a composition for orchestra which makes extensive use of an ST.

The work, titled "Synthesis," uses Steinberg's MIDI sequencing software *Cubase* to great effect. In fact, the music was written in *Cubase* running on a Mega ST4. What's more, the ST is to be used in the first performance of the piece,

complete with a 90 piece orchestra at the RCM on 16 March.

The RCM are at the forefront of classically-orientated music composing, production and replay. Their equipment includes an S1000 sampler and Yamaha DX-7 synthesizer, all controlled by the ST. The scores the members of the orchestra will be reading from at the premiere of *Synthesis* were actually printed out by the ST from within *Cubase*. Even-lode Soundworks distribute *Cubase*, which costs £475 ☎ 0993 898484.

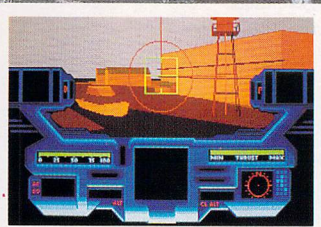
■ *Cubase* is used by popular composer Neil Palmer too - for details of his setup and his exclusive tips on how to write a pop chart hit, see page 106

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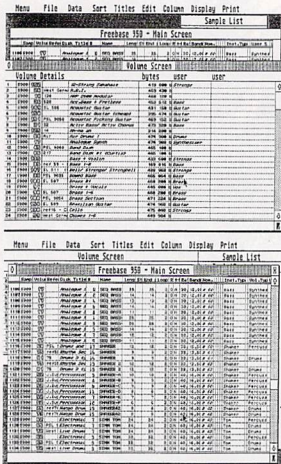
News from abroad

Through the marvels of modern technology, FORMAT brings you the latest from the States – overseas news so hot our modem lines are still smouldering

MIDI STATESIDE

C-Lab, those purveyors of quality MIDI software, have pulled off what could be a very lucrative coup. Atari USA have just announced that they have entered into a joint marketing and dealer support program with C-Lab, involving 50 key Atari dealers in the States. These dealers are to be trained in selling C-Lab's music software in conjunction with the 1040STE, Mega STE and TT030.

The benefits of this deal are two-fold for Atari. Music professionals, identified by Atari as one of their target markets already, will be still more likely to buy Atari because the backup will be there, thus improving the ST's shaky image over the pond. The second effect is likely to be



■ C-Lab's *Notator* gets Atari's backing in the States. Does this mean slightly more inspiring tunes than "Happy Birthday" are going to emerge from the US?

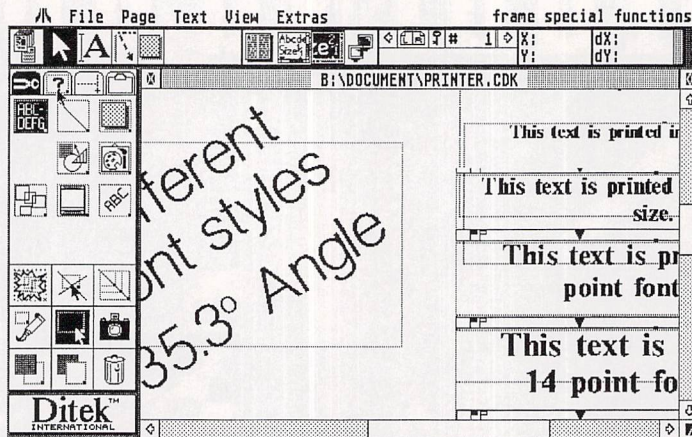
NOT A GRASS, MY SON, BUT DEFINITELY AN INFORMER

Decent database programs have been a bit thin on the ground for the ST. Soft-Aware Ltd in the States have recognised this failing and come up with their own GEM-based program which goes under the name of *Informer 2*.

The package is a data/image manager. A series of database cards can be created which have images connected to them. This is useful for things like form letters, application forms, membership

cards or even rejection slips. The cards, with their data, can be viewed in slideshow form or by dipping into the pack.

Soft-Aware reckon that their program combines all the best elements of word processors, form managers, report writers and spreadsheets in one package. It's available from Soft-Aware Ltd in the States, ☎ 0101 714 982 8409. Watch for the full review of *Informer 2* in next month's *ST FORMAT*.



■ Calamus and Ultrascript – the DTP partnership of the century?

increased ST sales combined with improved third-party support.

Gregg Pratt, Atari USA's General Manager, said: "In today's competitive market, we have to do more than simply provide MIDI-compatible systems with the best price/performance. In order to expand our market share, we must provide maximum support to the dealers who specialise in providing MIDI systems to both novice and professional musicians."

This outlook is refreshing, since it suggests that Atari might finally have spotted one of the strong points of the ST. Atari USA have dramatically changed their public image over the last six months, and this deal improves it still further.

ULTRASCRIPT ST?

Atari plan to release the powerful output protocol software *UltraScript* for the ST, in a joint venture with a company called QMS/Imagen,

according to a recent report in *ST Report* on-line newsletter.

The program is to be released as a Terminate Stay Resident (TSR) program. It will enable DTP users to access the peripheral communication software *UltraScript* from within *Calamus*, *Pagestream*, *Retouche* and other DTP programs. Atari's intention is to make *UltraScript* as standard on the ST as GDOS, which should result in many more ST programs becoming available to exploit it. *Postscript* support is also in the pipeline, meaning that ST owners can access professional quality output devices with ease for the first time.

MENU MAGIC

Original software is appearing all the time in the States – increasingly, productivity software aimed at the strong technically-orientated ST market. The latest program in this vein is *Menu Plus*, a Desktop enhancing program from Rimik Enterprises.

Menu Plus is a program launcher which can be run from GEM. You configure the program by detailing which programs you'd like launched. These can be run from either floppy or hard drive, with the advantage that you don't have to root around inside folders and drives to find the right bit of software.

Sub-menus containing (say) games can be set up, and then you simply click on the appropriate menu choice and the program runs. Another major feature of the software is that you can view pictures and listen to sound samples from within the launcher. *Menu Plus* works in only

30K of memory, making it a viable tool for all ST owners. Contact Rimik Enterprises, ☎ 0101 619 630 1217.

DOUBLE CLICK DARLINGS

The American company Double Click Software got started by writing PD and Shareware programs. They've recently found success with their *DC Desktop* and *DC Utilities* programs (both of which are reviewed in this issue – see page 47). However, the boys haven't forgotten their roots and have started out on an amazing thank-you exercise.

Every single week for a year, the DC chaps are releasing a program onto the Public Domain market. They've already been at it for four months and they show no signs of letting up. They've even invited users to write to them with suggestions for programs to make their "utility of the week." These programs find their way onto the CompuServe network in the first place, but no doubt they'll quickly emigrate to this side of the pond. Double Click Software ☎ 0101 712 977 6520.

MEGA STE DEVELOPMENTS

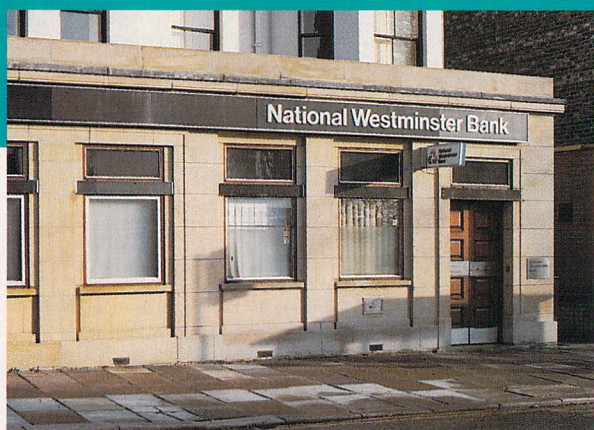
The scorching Mega STE is now shipping in both America and Germany. However, launch of the machine in this country is only now imminent, so why the delay?

Basically the German and American markets are far more technically orientated. German owners use their STs primarily for serious jobs such as DTP, word processing and music – areas where the Mega STE's power comes into its own – far more than their game-playing British cousins. The American market is similar, even if there are fewer ST owners there.



■ The Mega STE, arriving at last in a British computer shop near you, very soon, probably...

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ST charts

Uppers, downers, movers, shakers, fakers and mickey takers...

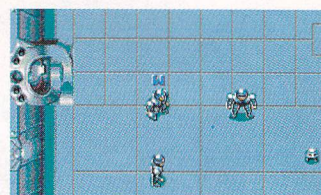
ST CHART CHAT

Yowsa! The long, long, long awaited *B.A.T.* swoops straight in at the top spot. One wonders whether the sound cartridge might have something to do with its radar reliant performance.

Powermonger and *Speedball 2* continue to squat at the number two and three spots for a second month, and *F19* pulls out of its terminal dive and zooms back up to the four spot. With *Lotus* in there as well, the top five's looking healthier than it has done in a long time.

Can't quite work out what *Emlyn Hughes* is doing at number 11 – could it be another *Steve Davis* barcode mix-up? Another surprise is the posse of elderly re-entries in the low twenties – who's buying *Cyberball* at full price?

The big three software houses are Mirrorsoft, Ocean and Codemasters again, although US Gold's Kixx label is enjoying a considerable amount of success. The top-selling game at the moment is *World Class Leaderboard*, the budget Kixx title that's pipping *B.A.T.* to the post.

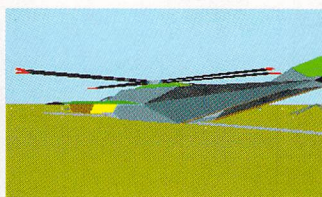


■ Mirrorsoft's highly playable *Speedball 2* doesn't move from its number three spot

CHARTBUSTERS

Yo, come on, chaps and chapettes. You've got to be a bit smarter with your choices for the top three. All right, so *B.A.T.* was a bit of a surprise and those *Turtles* took a dive against all odds, but do at least try and predict games that have actually been released!

If you think you can correctly predict the top three games for next month, we'll lob you the game of your choice from the top ten. Send your predictions, on a card of the post type, to *Chartbusters*, ST FORMAT, 30 Monmouth Street, Bath BA1 2BW. Don't forget to name the game you'd like if you win. Small prediction type hint: *Viz* should be out by then, and also *Killing Cloud* and *MiG-29*. Good luck!



■ Ocean's action-packed tank sim, *Battle Command*, storms into the charts at number 10



■ After a long, long absence, Domark's *Cyberball* pops up in the charts again at number 30

■ Main Charts: STF refers to issue and score of review in ST FORMAT. These full price and budget ST charts are compiled and supplied by Gallup. © 1991 European Leisure Software Publishers Association Ltd

CHART KEY

RE Re-Entry

NE New Entry

◄◄ Non Mover

▲ Up

▼ Down

ST BUDGET TOP TEN

1. **NE** World Class Leaderboard Kixx
2. **NE** Steve Davis World Snooker CDS
3. **NE** Outrun Klassix
4. **▲** Super Hang On Hit Squad
5. **NE** Barbarian 2 Kixx
6. **▼** Fantasy World Dizzy Code Masters
7. **▼** Afterburner Hit Squad
8. **▼** Treasure Island Dizzy Code Masters
9. **NE** Last Ninja 2 Hit Squad
10. **NE** Vigilante Kixx

1	NE	B.A.T.	UBI Soft	£34.99	STF 17: 92%
2	◄◄	POWERMONGER	Electronic Arts	£29.99	STF 19: 93%
3	◄◄	SPEEDBALL 2	Mirrorsoft	£24.99	STF 18: 88%
4	▲	F19 STEALTH FIGHTER	Microprose	£29.99	STF 12: 96%
5	▲	LOTUS TURBO CHALLENGE	Gremlin Graphics	£24.99	STF 18: 86%
6	▲	SPECIAL CRIMINAL INVESTIGATIONS	Ocean	£24.99	STF 18: 78%
7	NE	NARC	Ocean	£24.99	STF 21: 64%
8	▼	TEENAGE MUTANT HERO TURTLES	Mirrorsoft	£24.99	STF 19: 38%
9	▲	TOURNAMENT GOLF	Elite	£24.99	STF 20: 73%
10	NE	BATTLE COMMAND	Ocean	£24.99	STF 19: 93%
11	NE	EMLYN HUGHES INT. SOCCER	Audiogenic	£24.99	STF 19: 38%
12	▲	HOLLYWOOD COLLECTION	Ocean	£24.99	STF 20: 76%
13	▼	KICK OFF	Anco	£24.99	STF 14: 92%
14	▲	PLATINUM	US Gold	£24.99	STF 17: 85%
15	▼	GOLDEN AXE	Virgin	£24.99	STF 18: 82%
16	▼	ROBOCOP 2	Ocean	£24.99	STF 19: 84%
17	NE	JUDGE DREDD	Virgin	£24.99	STF 19: 41%
18	▲	LOST PATROL	Ocean	£24.99	STF 18: 88%
19	▲	CRICKET CAPTAIN	D&H	£24.99	STF 17: 73%
20	▲	TEAM YANKEE	Empire	£29.99	STF 16: 84%
21	◄◄	M1 Tank Platoon	Microprose		
22	NE	ESWAT	US Gold		
23	▼	Toyota Celica Rally	Gremlin Graphics		
24	▲	Total Recall	Ocean		
25	▲	Gazza 2	Empire		
26	NE	Operation Thunderbolt	Ocean		
27	RE	Operation Wolf	Ocean		
28	RE	Ghostbusters 2	Activision		
29	RE	Ghosts And Goblins	Elite		
30	RE	Cyberball	Domark		
31	▼	Sly Spy	Ocean		
32	NE	Fun School 2 (6-8 Years)	Database/Mandarin		
33	RE	Operation Stealth	US Gold/Delphine		
34	NE	Midnight Resistance	Ocean		
35	RE	Fun School 3 (Over 7)	Database/Mandarin		
36	RE	Fun School 3 (Under 5)	Database/Mandarin		
37	▼	Turrican	Rainbow Arts		
38	NE	Trivial Pursuit Genius	Domark		
39	NE	Sega Master Mix	US Gold		
40	▼	Multi Player Soccer Manager	D&H Games		

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Previews

Ladies and gents, join us as Andy "Not for that price, Matey" Hutchinson takes you on a not-very-magical-at-all-really mystery tour of the future of ST games



■ The main cockpit view in the A6 intruder in Spectrum Holobyte's new flight sim *Flight of the Intruder*. Looks like Vietcong on the way

Better than life?

Spectrum Holobyte have their work cut out for them. *Falcon* proved to be a very popular flight simulator and any follow-up has got to be something special. That sequel is nearly ready for release, and it goes by the name of *Flight of the Intruder*.

Mirrorsoft are the British distributors of the game, and they're hoping it will appeal to the legions of ST flight simulator addicts who invested in games such as the *F-xx* range.

The program is actually being written in this country (*Falcon* was programmed in the States). Tim Barton, project leader on the *Flight of*

the Intruder project, reckons *Intruder* is unique among flight simulators.

"It's the first game where you can fly a whole mission," he says. "You control all the aircraft, not just one. This means you can swap between planes in the air." Tim believes this adds greatly to the player's interest in the mission as a whole. So how does this plane-swapping work?

"It's very easy to do. All the planes fly in pairs – you simply pick a plane and swap to it. You can have your A6s doing a Wild Weasel, attacking radar and then swap to a Phantom and do a bit of MiG-capping. Then when you've done that

you can swap to another A6 and carry out the actual bombing mission. You can also actually swap to one of the enemy aircraft, so you can check out the view from a MiG." The more stuff you do in the other aircraft, says Tim, the greater your score at the end of the mission, so it's well worth experimenting with the other planes.

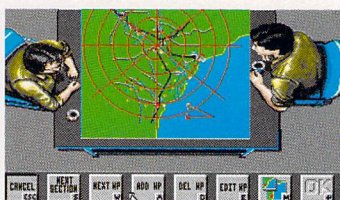
Intruder looks quite similar to *Falcon*. Apart from the plane swapping, what's the difference between the two? "Well, we've kept the speed of *Falcon*," Tim says, "but improved on it. *Flight of the Intruder* is better than *Falcon*. You can create your own missions and detail exactly when the planes take off. If you set the start time for four in the morning, then it'll be dark when you begin and you can fly through the daybreak." He adds that there are such nice touches as a bad weather option. If you include this option there's a cloud level with grey weather beneath and clear skies above.

With so many flight simulators about, though, what makes *Intruder* so different? "It's the realistic angle," Tim claims. "It's based on the real world, which is very hard to simulate effectively. A lot of flight simulators ignore the real world. *F-29* for instance isn't very realistic at all – I mean, you could just slap whatever you wanted on the plane and just go and nuke someone."

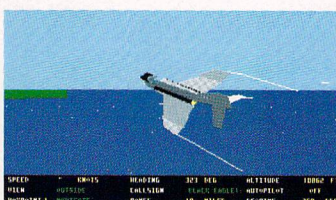
Flight of the Intruder is based on the book of the same name, set during the Linebacker campaign in Vietnam in 1972. Release is set for mid-May. With a film of the book coming too, we could be hearing more about *Intruder*. Don't miss the full review in *ST FORMAT* next month!



■ Don't shoot that ship – it's friendly. Er, maybe. Well, it looks kinda friendly. At the moment. Nice shade of grey, anyway...



■ "Okay, Number Two. Take off at 0600 hours and rendezvous with Daisy and the other girls at Soapy Joe's Gin Palace at 0900"



■ The external view of your A6. Note the vapour trails that appear as you force your pilot to take a little too much G-force

IN PRODUCTION

■ Rainbow Arts have been busy knocking up some new ST games. In the pipeline is a shoot-'em-up, **Z-Out** – the peculiarly named sequel to *X-Out*. (What happened to *Y-Out*?) **Masterblazer** is the 16-bit conversion of *Ballblazer*, the futuristic 3D sports game. Finally, **MUDS** is a grim game revolving around out-and-out combat. The idea is to manage a team of frisbee throwing convicts and annihilate your way to a big finale.

■ Strategy software house Impressions have two new games approaching release. **Merchant Colony** is set in the nineteenth century and is all about setting up colonies and keeping them supplied. **Africa Korps** is a WWII war-game set in 1940 and is the follow-up to the successful *Blitzkrieg*.

■ **Blue Max** is another one of those First World War biplane games. This one's being distributed by Mindscape and has been pending for a while. Watch this space...

■ Ocean seek to stem the growing tide of US Gold titles with a licence and an original. **Navy Seals** is the game of the film about those hunky SAS type chappies in America who get to endanger their lives every weekend. **Billy the Kid** looks like it could be some fun – can you guess what the game involves?

■ **Pro-tennis Tour 2** is UBI Soft's follow-up to the highly-rated sports simulator. With such a glut of tennis games about, are we going to see anything original in this latest offering, or more of the same?

■ **Battlebound** is a four level barbarian type game with platforms and jumps, in which you've got to rescue a damsel in distress by duffing up all and sundry. The release date pencilled in is the end of the month.

■ Whizzing around the human body with a bunch of corpuscles is the theme to **The Enemy Within**, the new shoot-'em-up from Electronic Zoo. Forewarning: careful when you're near the groin...

■ Adventure fans, recently deprived of gritty games to get their teeth into, can stop despairing. Virgin Mastertronic are releasing five more classic Infocom adventures on their £9.99 label. **Zork 2** and **3**, **Enchanter**, **Sorcerer** and **Deadline** should all be available by the end of the month...

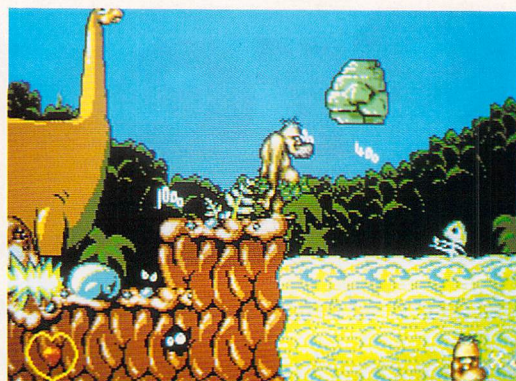
Prehistoric gameplay

The programmers at Palace have been beaver away recently on a Flintstones-inspired game called *Chuck Rock*. The game follows the exploits of the Neanderthal hero Chuck, in his search for his kidnapped girlfriend.

All the groovy prehistoric characters you'd expect to find in a game of this type are there in force. Brontosauruses, pterodactyls and killer plants all conspire to prevent Chuck

from finding his true grunt again. Early screenshots are impressive – a cartoon look has been chosen which owes much to Hanna-Barbera animations. A slick cartoon sequence at the beginning of the game looks so impressive you'd swear you were watching the Disney channel. The idea isn't just to watch, of course – *Chuck Rock* is a jumping, swinging platform game with Chuck belly-busting his way through the opposition.

■ He's smooth, suave, sexy, sophisticated, smelly and saggy: *Chuck Rock*, the Neanderthal hero with a terrific line in fig leaves

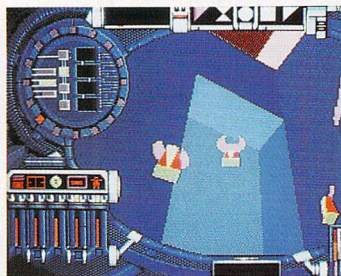


Demon in universe ripping shocker

Palace have invested in some serious writing talent for their latest game, *Demoniak*. It's been penned by none other than Alan Grant, the talented 2000 AD writer responsible for Judge

Dredd and Strontium Dog. Palace are touting *Demoniak* as a "pure fiction" game. Apparently this is a brand new system which "simulates a game-world." There are over 50 characters,

and you can either engage them in some pleasant conversation or take control of them. Pre-release graphics look splendidous to the extreme – this could be one to watch.



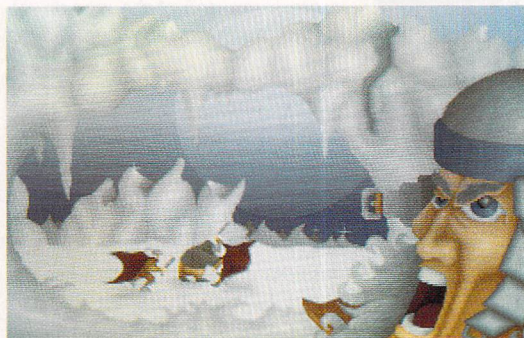
■ "Now come on, Cybercon, be reasonable. You can have your transformers back when you stop wiping out mankind. Oh, all right then, we'll throw in an eagle-eyes Action Man..."

Never trust a computer in a bad mood

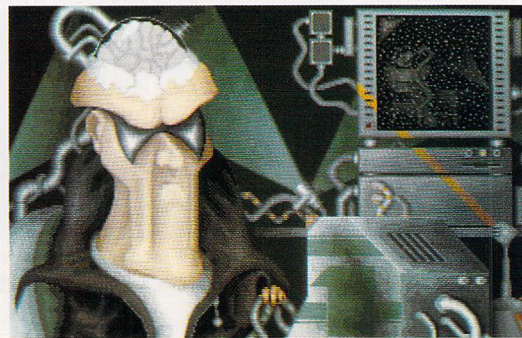
A chap named Ricardo Pinto, who was partly responsible for *Carrier Command*, has designed *Cybercon 3* for US Gold. Screenshots look vaguely *Interphase*-like, with 3D light-shaded filled-vector graphics making a welcome return to the ST.

The plot of *Cybercon 3* isn't exactly cheerful. Cybercon, a massive defence computer which controls the world's weaponry, has gone a bit HAL-9000 and decided that the human race needs destroying. To this end it's gone and wiped out most of us hopeless humans. The idea of the game is to infiltrate Cybercon's defence systems and destroy it.

If the programmers have managed to create a fast 3D engine then we could be in for a treat. Power-ups and tricky puzzles have been scattered throughout the game, meaning that it should have a slightly longer shelf-life than the average explore-'em-up.



■ "Quick, Nigel, get over here, fast – someone's doing in Bertie, the travelling donkey salesman. Pass me that 12-gauge egg whisk, me old mucka!"



■ Here, our ed models an open-top head and the latest ST interfacing tool, the Editorial-idea-generator and general virtual trip machine

Enter the crystal maze

Fantasy role playing enthusiasts should enjoy *Crystals of Arborea*, a 3D adventure game similar to the old 8-bit hit *Lords of Midnight* (but bigger), coming in April from Palace. The game's got one of those interminable storylines about wizards, princes and Lords of Darkness which take up 80% of the manual.

The idea of the game is to find four crystals and return them to their sacred shrines. You control a geezer who goes by the name of Jarel. At your disposal you have some white magic and a lovely pair of leatherette pantaloons. Pre-release screenshots look as if the graphic artist has spent months making the game look sexy, but we'll wait till we see it to give our verdict on the gameplay. Everything's mouse driven, and all scenes have a nice piccy.



■ "What am I offered for this luvly gem? Come on, darlings, it's only had one previous owner, a demi-god who used it as a paper-weight. Yes, you, madam, the one at the back with the shawl..."

Run the Gauntlet

Gauntlet 2 was a storming success, so it's hardly surprising that US Gold decided to follow it up. *Gauntlet 3* is nearly here, and early demos look promising. The overhead plan view of the original games has been replaced by an isometric three-quarter angle on the gameplay area, but the old characters we all love have been included and US Gold reckon there are just as many wicked puzzles to overcome. The ultimate aim of the game is to return peace to the land of Capra, which has been taken over by some nasty underworld creatures. Let's just hope everyone's favourite, the "it" monster, has been left in. **stf**



■ Barbarian squares up to ghost and prepares to knock seven shades of ectoplasm out of him

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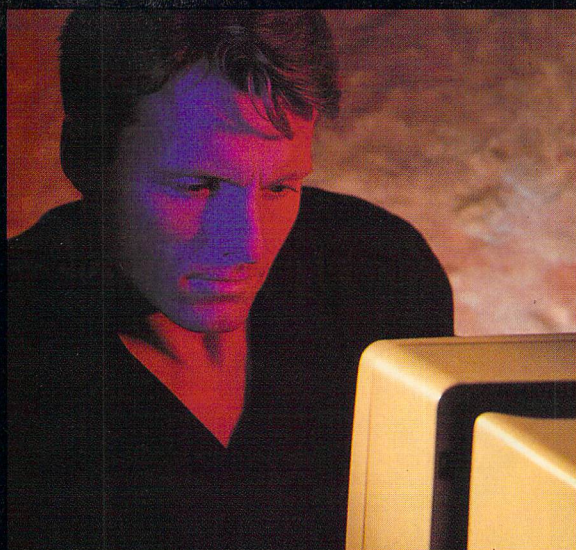


The ST is just the

The Atari ST is the perfect introduction to the world of computing. The power of the ST allows you to run "serious" applications as well as playing games, and the ST system is flexible enough to allow you to expand as you develop your interests and expertise in different applications.

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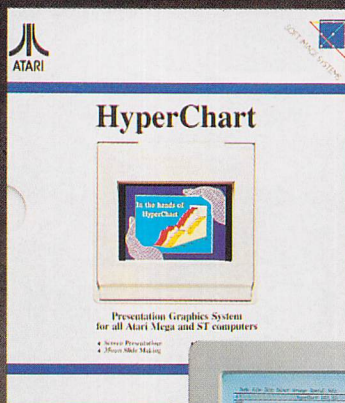
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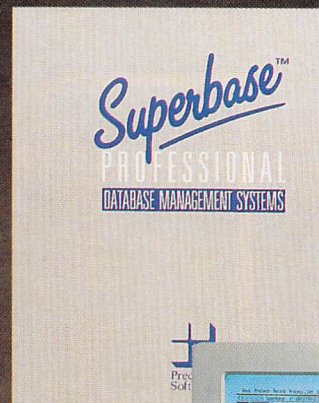
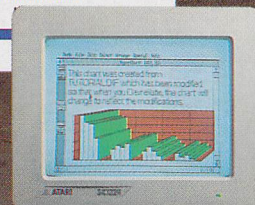
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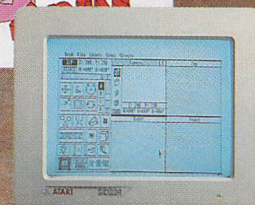
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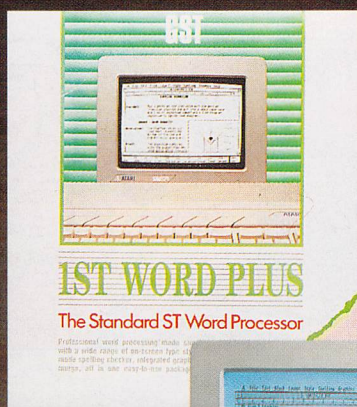
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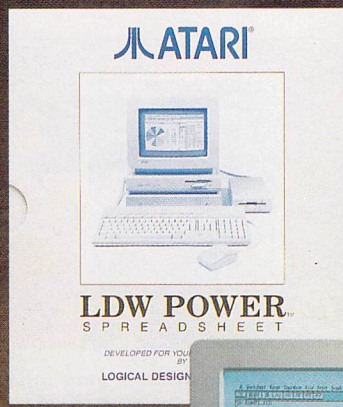
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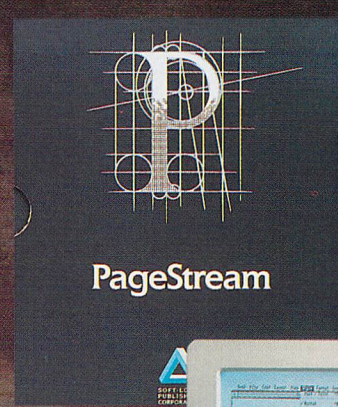
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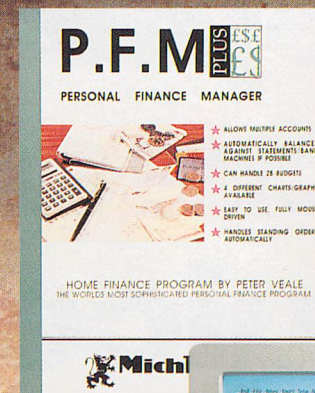
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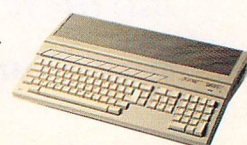
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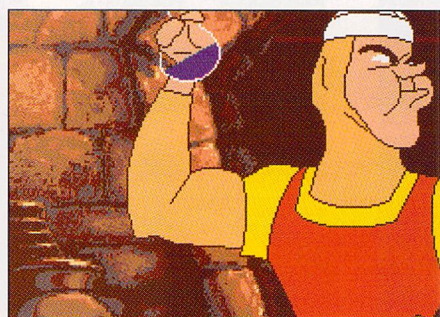
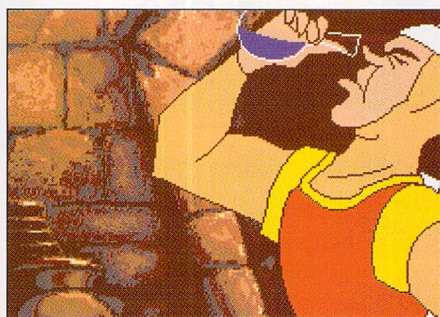
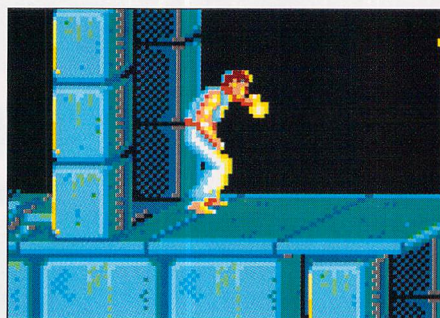
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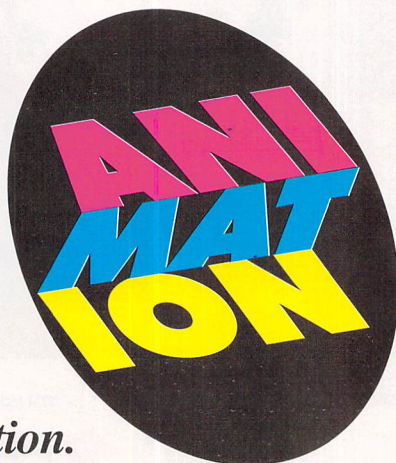


■ If you're looking to put the power of your ST to use, animation is your answer. At the top, the central character in *Prince of Persia* drinks from a bottle. In *Dragon's Lair 2* (next row) the star character, Dirk the Daring, performs the same movement. The *Prince of Persia* sprite is just 39 pixels high, while Dirk is a mammoth 180 pixels. Accordingly, it takes many more frames of animation to display all the small limb movements necessary to represent Dirk drinking from the bottle. Any mistakes in a sequence of this size look very obvious, so keep your drawings small to start with

Spark your creative juices

Cartoons like the Turtles and films like The Little Mermaid have sparked a renewed interest in animation.

At the same time, contemporary games like Dragon's Lair 2 and Prince of Persia have proved that astonishing animation can be achieved on any ordinary ST. Now you can try out these animation miracles for yourself!



Animation is one of the most visually impressive art forms ever. Surprisingly, many people believe that to create decent animation on a computer you have to be something of a computer whizzkid. Not so! You can make your ST perform sensational graphic masterpieces and you don't need to know a noodle about programming.

Although you can lay your hands on special 3D software which rotates objects smoothly, the best and fastest form of animation still involves repeating a series of slightly different pictures, referred to as frames. Showing these frames in succession demands little of the ST's processor time, so games like *Dragon's Lair 2* (reviewed in

"You can produce sensational animation on your ST, without knowing a noodle about programming"

FORMAT last issue) and *Prince of Persia* (reviewed *STF* 19) manage to combine sophisticated animation with some sort of gameplay.

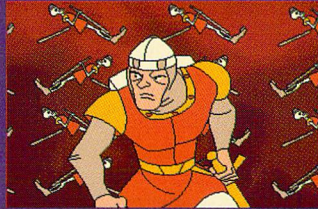
It's basically the rate at which these frames are shown and the degree of change from one to the next which determines the quality of your animated strip.

If you want to show a running character, a sequence made up of ten frames is inevitably going to be smoother than one that tries to capture the same movement in only five. However, if you're using only small characters (or sprites) then five frames is more than enough to work with – in *Prince of Persia*, only four frames were used to portray the character running. With larger sprites all the motions are emphasised: if your sprite is a human half the size of the screen (100 pixels) and you try to show him

HOW THEY PRODUCE A READY-MADE CARTOON SUCCESS

The animation in Readysoft's games has a very traditional cartoon feel to it – hardly surprising since their first release, *Dragon's Lair*, was converted from an arcade game produced by Don Bluth, who used to work at Disney Studios. There was so much animation going on at once that Bluth had to come up with some way of storing all the information. The traditional chips worked out far too expensive, so a laser disk (similar to a CD) was used instead, making *Dragon's Lair* the first laser disk arcade game.

Readysoft's Project Manager, David Foster, explains how they go about assembling their animation sequences: "After we decide on a scene concept, a pencil background is drawn, which is placed on a light-table under each frame as it is being drawn, enabling our



■ **Readysoft's Disney-style romps boast the best ST animation there is. Animating characters on this scale takes so much processor time, however, that you get wonderful visuals but poor playability**

animator to obtain the correct perspective. We decide on the actions we want the character to perform and then set about creating rough key frames in each sequence. Once we feel we have the correct motion, the rough sketches are cleaned

up and the intermediate frames (twens) are drawn.

"When all the frames in the sequence are drawn and look good on paper (checked by flipping the actual individual pieces of paper), they are digitised, using 16 grey scales because there is too much drop-out using only black and white. (A peg board on the digitising table ensures that all frames are perfectly aligned.) When digitised, the lines are too thick to be used and there are also many remnant greys throughout the image, but the curves and flows of the line come in perfectly. Using a drawing tablet, by contrast, introduces irregularities due to inaccuracy in tracing the images. The digitised lines are gone over again to make them a single pixel wide and to remove all greys. The line images are then given one final touchup to

add detail (like faces and musculature) and are flipped using the animation features of *DPaint*. Finally, the colour is added and the palette adjusted to conform with the restrictions of the given scene."

To add backgrounds, the process is to draw the backgrounds in pencils first and then digitise them. All the colour and detail are then added using *DPaint*.



■ **Readysoft's David Foster explains the complexities of sophisticated animation**

drinking from a glass in just five frames, your animation is going to be jerky, because lifting a glass and drinking from it demands some large swings in the character's arm movement. However, if the sprite is just a tenth of the screen (20 pixels), these movements cover a much smaller area and can be represented easily in five frames. When you're planning an animation sequence of your own, therefore, the first key element to watch is the size of the characters you want to animate.

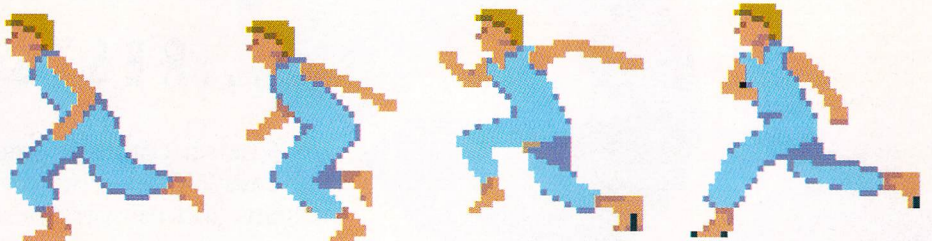
Any animation sequence makes demands on your drawing talent, but even if your human beings look like The Monster from the Swamp you can still get by. Just bouncing a ball around the screen is a superb way to play with animation and all you need to be able to draw is a coloured circle! Tire of that and you can play with shading. Don't be over ambitious because it's easy to be put off when your drawings don't live up to expectations.

In last month's feature on the making of *Stormball*, the follow-up to *Resolution 101*, game designer Paul Carruthers told *ST FORMAT* that he thought reptile-headed aliens were a graphical cop-out – but for most of us, people are a graphical nightmare. Animating them is particularly difficult because there are so many parts of a human which move at once. When you walk, it isn't just your legs which move but your arms, torso and even your head. On the other hand, to make a bee fly across the screen all you need to do is show its wings flapping up and down, so that's an easier place to start.

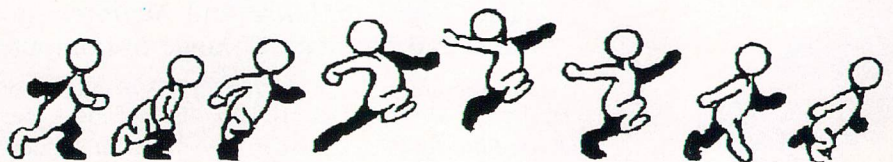
Designing realistic human movements can be an involved job if you want to get it right. The French-based programming team Broderbund were responsible for creating the highly

WALKING YOUR WAY OUT OF TROUBLE

The easiest animation to create is a walking motion. Although it takes a while to work out the correct movements for the head and feet, once you've got them sorted you can repeat the frames for as long as you want. The problems come when you want to slow to a standstill or even change direction. A whole new set of sprites must be designed for each of these different movements.



In these four repeating sprites notice how the character leans in the direction he's running. The movement of the feet is always tricky, particularly at the point where one leg disappears behind the other (in this case, frame two). Bring a hint of the second leg into view and be careful to add shadow to give the impression that it's coming from behind. In walking (but not in running), one foot is on the ground at all times. The arm swings forward to steady the character's balance and swings back again in the third frame where the character leans forward



In this sequence by professional animator Mark Pickavance, the walking motion becomes a skip, extended over eight frames rather than four. If you exaggerate the movement of the limbs you can give your character more life. Although he might look less realistic, the animation sequence is actually far more believable

Don't take the artists' word for it, try it out for yourself. Our unique Cover Disk demo, Animaster, enables you to produce your own sophisticated animations. Turn to page 32.



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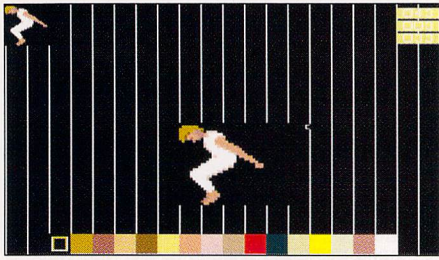
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■ To test out their animations, programming team Broderbund developed their own animation program called **APaint**

effective human animation in *Prince of Persia*. Project Manager Dominique Biehler explained to *ST FORMAT* that to get the animation right they digitised someone running and then worked from stills selected at equal intervals from the entire sequence. Graphic artist Marco de Floras then drew the sprites in Electric's *Cyber Paint* and imported them into Broderbund's own animation program, *APaint*. This program displays the sprites in sequence to show how effective the motion appears. It's important to make sure that each of the sprites has progressed by roughly the same amount.

Other graphic artists work out the movements of their hero on paper first. Mark Pickavance, who designed the sprites for Grandslam's *The Running Man*, drew simple sketches of a racing figure before reproducing these in an art package and clothing them. This has the advantage that you can start out with a specific number of frames and devise your sequence to fit. For a five-step sequence, you can draw the start frame in the first box, work out the middle of the sequence and draw that into the middle box, then fill in the last piece of the sequence in the final box before adding the middle frames.

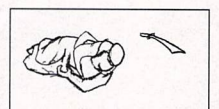
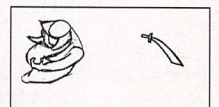
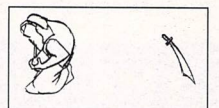
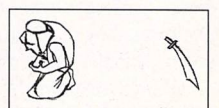
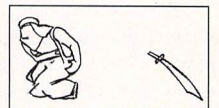
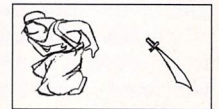
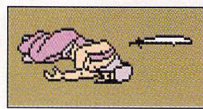
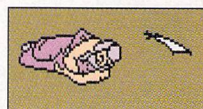
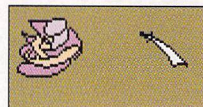
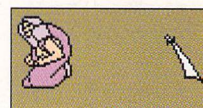
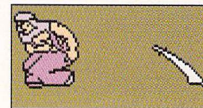
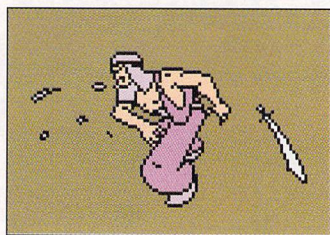
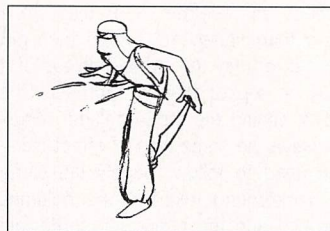
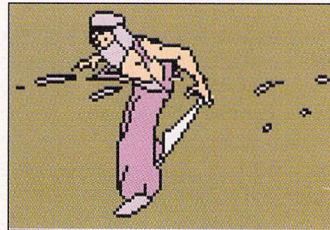
It's important to bear in mind that the fewer frames you use, the longer each one has to remain on screen. In some sequences, it's desirable to show one sprite on screen for longer than others. For example, when leaping, you change pose very little until you land, so one sprite is enough for all the time you're in the air.

Once you've got the basic figures drawn you can start to tinker with them to perfect your animation. Of course an animated sequence doesn't really take off until you start to add colourful backgrounds and other clever effects such as background animation. To get started, just follow the tips here and on the next few pages!

WHAT ABOUT AN EFFECTIVE DEATH?

It's one thing giving life to your sprites through animation, but what happens when you want them to drop dead? Most games carefully avoid the dying process – when characters cop a bullet they tend just to disappear off the screen. This is hardly a surprise when you consider how many frames of animation are required to show somebody falling to the ground.

In these sprites from one of Readysoft's new projects (so new it hasn't even got a name yet) you can see the complex stages involved in displaying the fall. Readysoft first work their design out on paper and in great detail – you can even see how they've planned the splattering blood and made sure the character drops his sword. When the pictures are converted to sprites, colour, shade and other small details are added. Although an entire nine frames are used, when played at the correct speed the sequence occupies less than a second of game time.



ONE SMALL STEP FOR MAN, ONE GIANT LEAP FOR ANIMATION

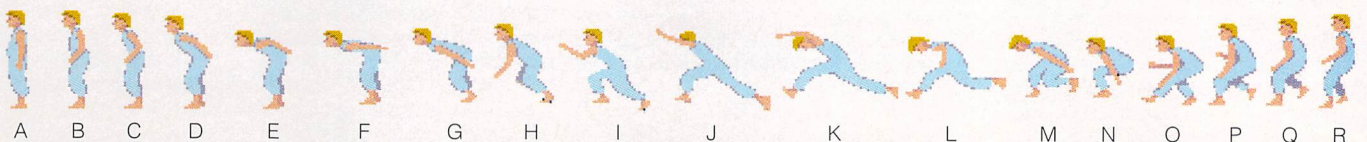
Before you design any sprites, make sketches first. Copy these, and add some clothes and details like hands and facial features using an art package – *DPaint* (Electronic Arts ☎ 0753 49442) or *Neochrome* (from the *FORMAT* graphics collection – see page 150) will do. Although it might take a while to work out the first sketches, once you have them at hand it's easy to design a vast range of characters using them as reference.

Frame K in the sequence remains on-screen longer than the rest – after you take off using frames A to J, it's scrolled left before the landing sequence comes into play. This is because when you leap up, you retain one pose while your body is in the air and change only as you come back down to

land. Most of the frames show the character either taking off from a stationary position or landing.

As the sprite begins to take off at H, notice the arc he follows before swinging down to land at M. By emphasising this arc you can give your animation more of a cartoon feel.

Because you can jump across chasms from a moving position as well as a stationary one, you need more than one sequence for a leaping movement. The frames here show your character making a dramatic leap skyward and then landing ready to start running. These frames are successfully merged into the four sprites used for the running movement so that you can't distinguish the break between the two sequences.



➤ Take a step back

Behind every great cartoon – is a background!

One of the most fundamental stages to an animation sequence is a scene which actually doesn't move at all. With a lively and colourful background you can bring your whole sequence to life. But backgrounds are much more than an excuse for getting colour into your frames.

When you design a background you must remember how your characters are going to move over the top. Put a platform across the entire scene and you can easily make them run onto it and stand in the middle, performing every acrobatic movement you can think of. Add some exciting colour and a couple of raised platforms they can leap onto and your sequence suddenly looks vastly more impressive.

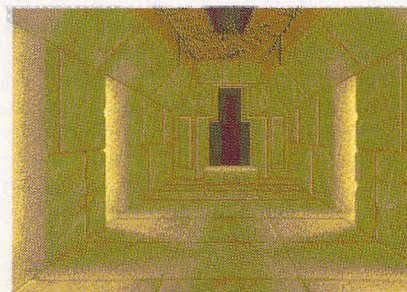
Many backgrounds have a tendency to look very flat and dull. To give them more excitement introduce perspective into your picture. Even if you only manage to incorporate the view of

some hills through a window or a small forest set in the distance, it's enough to give your animations more depth. When adding perspective to your pictures, however, watch out how this affects your character. It's okay to put a pathway leading back into the picture and trailing off across the hills but it's a nightmare trying to make your character run down the path. Instead of repeating your running sprites, you need to devise a completely new set of sprites showing your character diminishing with each step until he disappears altogether.

Another important point to watch out for is running your sprites behind objects. A sprite might look wonderful if he dashes headlong down a gloomy corridor, disappearing behind intermittent stone columns, but you have to be aware of your limitations. Imagine if you were trying to create such an animation using the traditional method. You would paint the background onto one sheet, the sprite onto a separate sheet of acetate and the stone columns on a third sheet. You would then put the first sheet down, lay the second on top of it and the third on top of that to represent the sprite standing behind the stone column. When you try to achieve the same kind of effect using your ST you need to follow roughly the same steps. The background minus stone columns should be drawn and the character sprite laid

over the top of this. If you then want to introduce a stone column, this too should be treated as a separate sprite and overlaid across the remainder of the picture.

Another way to add sophistication to your image is to introduce smaller animations. In the case of *Prince of Persia*, an atmosphere-setting candle is located on the back wall. Here two frames of animation are cycled over and over again and these are enough to give the impression of the candle flickering. There's a host of other scene-setters you could add to your picture – a spinning fan, a steaming cup of coffee, a swinging pendulum on a clock or just smoke pouring off a fire. The possibilities are endless, and the improvements can be staggering.



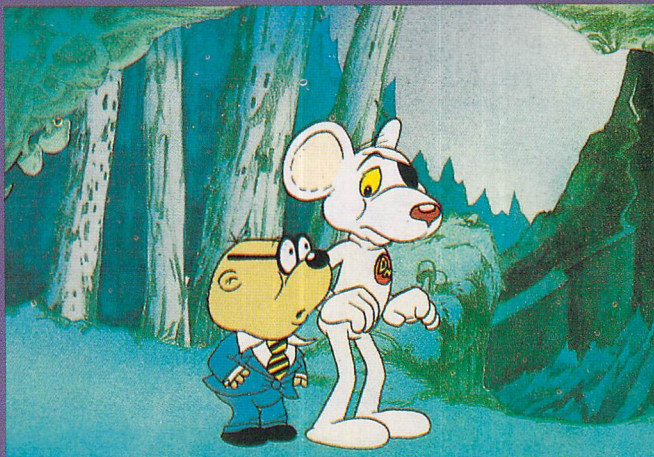
■ The backgrounds in Readysoft's games are based around brightly coloured landscapes and buildings, à la Disney

THE PIC IS QUICKER THAN THE EYE

Alex Soboslay tells the moving story of animation

Animation, video monitor display and cinema all depend on the same basic phenomenon. It's called *persistence of vision* – and you've experienced it yourself in real life if you've ever been dazzled by a bright light at night, or if you've ever seen an after-image of something you've just looked away from. The light receptors in the human retina take a tiny fraction of a second to recover after firing, so they can't send an updated message to the optic nerve more than about 20 times a second. The result is that an image on the retina lingers for something between one-twentieth and one-tenth of a second, depending on how intense the image originally was – or even longer, in the case of those dazzling headlights at night.

Persistence of vision means that if you present the eye with a new, slightly different image before the first one has completely disappeared, the brain blends or overlaps the separate images and perceives the illusion of continuous movement from one to the next. This is exactly what happens in the cinema, where the familiar strip of separate frames is projected at about 24 frames a second – though in fact you can get the illusion of movement at much lower speeds, and up until the 1930s films ran at only about 16 frames a second.

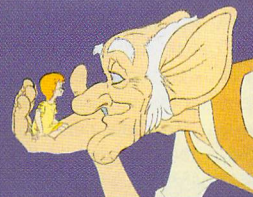


■ Danger Mouse (and Penfold) demonstrate Cosgrove Hall's use of moving figures overlaid on a static painted background

In animated films each frame is a shot of a separate picture or "cel" – so called because the original is painted on celluloid. In the early days of animation, the animator would have to draw every single frame in full, background and all, but various shortcuts rapidly evolved. The first step was to animate only the moving figures against a fixed background which showed through the unpainted parts of the celluloid. In the animation studios of the 1940s the animator drew only the key phases of every movement and a host of assistants called "in-betweeners" filled in the steps

along the way. Cosgrove Hall studios still use this setup to produce *Danger Mouse*, *Count Duckula* and their other hit shows.

Some animators resorted to a gadget called a rotoscope, a kind of enlarger which enables you to trace films of real people frame by frame – though oddly enough rotoscoped animation doesn't look right and is easy to spot. For the television cartoons of the 1960s various systems of part-animation were developed, where the basic figure itself wasn't redrawn from frame to frame and only parts of the body were animated – though this often resulted in very



■ The Big Friendly Giant, star of a 90 minute fully animated film from Cosgrove Hall

unconvincing movement. These days there are only 12 separate drawings for each second of film and each of these is "held" or shot twice. This keeps the workload (almost) manageable – but Cosgrove Hall still need to produce about 1,500 frames for one minute of animation.

Video monitors and TV screens work on the same principle, with an electron gun redrawing the image on a phosphor-coated screen about 25 times a second. However, the memory of even the most powerful micro would soon become as exhausted as our traditional animator by having to draw a completely separate picture each time, so computer animation usually relies on many of the traditional shortcuts. For instance, if only relatively small parts of the screen change from picture to picture – say a couple of figures moving against a static background – then the background and the "sprites" for each step of the movement can be stored separately in memory. Using such techniques, your ST is capable of producing animation as fast as the best TV cartoons – 25 different frames every second.

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Ripping apart a

To demonstrate the kinds of animation effects which can go into making a single screen, we rip apart a scene from Prince of Persia

Producing a perfect animation is about much more than coming up with a few nifty sequences of a cartoon character scratching his head. It's when you put it all together that it really comes to life. Combine several sequences in a set of frames and you can come up with some very active scenes.

Take a glance at a scene from *Prince of Persia*. As the Prince dashes across the screen at full speed, it's not only his movement you see. In the background there are candles flickering; a portcullis opens when the hero reaches it;



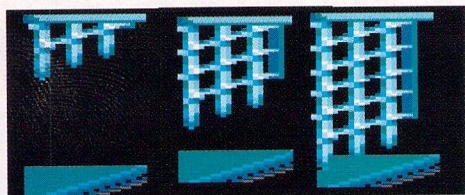
tiles fall from the roof; special step-switches move up and down when you stand on them. These extra effects add more life to the whole sequence. The more a character interacts with a background, the less like a separate still picture the background becomes.

To give the impression of speed or simply to obtain more movement, you can scroll your backgrounds left and right. This is a trick your ST can perform with great ease. It echoes a similar device which professional animators use. In Cosgrove Hall's *Big Friendly Giant*, a huge

background was drawn, much bigger than one frame full, and the individual character frames were overlaid on this. The characters can be moved around the background and a computer-controlled overhead camera shoots the film.

Then there's the multi-plane camera which Disney devised in the 1930s and used in *Snow White*. This enabled them to perform close-up shots without drawing new backgrounds over and over again. They split their backgrounds into several separate plates so the moon and clouds were on one plate and the closer background on another. As they zoomed in for close-up shots the middleground grew closer but the moon stayed the same size because the back plate was moved further away from the camera.

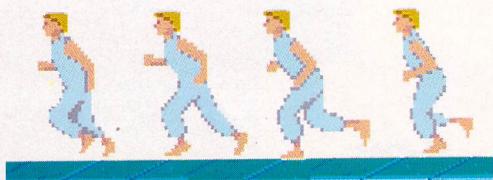
In the PD demo *Delirious Three* (available from MPH – see *FORMAT's* PD library directory, page 129), the enhanced features of the STE are put to good use in constructing a multi-plane background. Instead of just one background



■ This sequence is deceptive. Only one frame is used for the **portcullis**. When it opens, this single frame is scrolled vertically upwards, revealing the open door in the background. Step on another switch and the portcullis falls to the floor

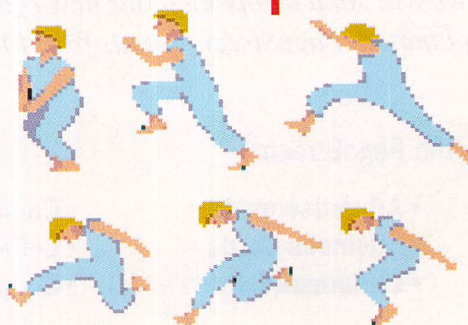
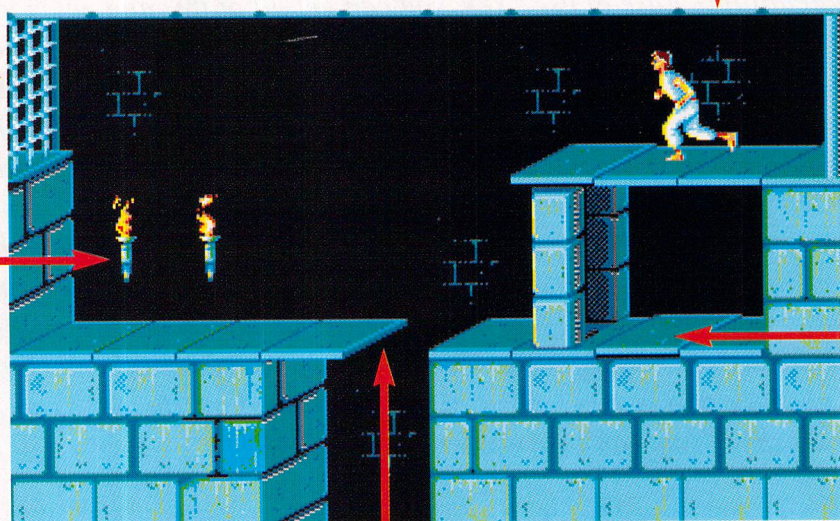


■ There are just three frames used to represent the **candles** flickering in the background. Display them in turn and alter the speed at which they're displayed to make the flame burn more or less fiercely. These frames can be replayed in any order because the differences between them are so tiny



■ Just four frames are used to show the hero **running** across these stones but they succeed one another quickly enough to make the movement look smooth, polished and realistic

■ Throughout this scene from *Prince of Persia* there are really only two animation effects which take up processor time – the movement of the hero and the flickering flame. The other animations are activated only when you stand in the correct position, so what's involved is first a collision-detection routine, before an animation sequence. For example, you need to stand on the switch to depress it and this in turn raises the portcullis. In the same way, tiles fall from the ceiling when you stand in the right place



■ When the Prince **leaps** over the chasm, a new set of frames is introduced. These frames are examined more closely on page 25

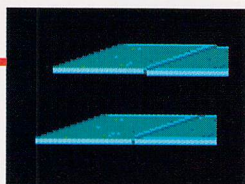
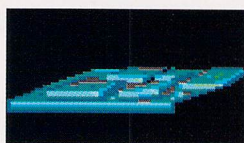
yarn

image, five were used. For example, the first one would be the foreground, exposing close trees. The next would contain the images found behind the trees, perhaps more trees. When the first one is overlaid on the second, the second plane shows through any gaps in the trees. Other planes are used in a similar fashion to show clouds, mountain ranges and so on. Each plane makes up just a portion of the background, so when they're overlaid you can see an entire background picture.

Although this doesn't look like much when stationary, it's when you scroll the frames left and right at differing speeds that things really take off. Imagine yourself in a speeding car on the motorway. Objects close to you in the foreground like roadside trees whizz past at a ridiculous rate, while the clouds and sun move only gradually. The horizon in between the foreground and the sky moves at a speed somewhere in between the two. It's dazzlingly realistic! **stf**



■ **Knock the tiles** and you activate a separate animation sequence. The tile rocks from side to side and then a single frame is scrolled down to the ground. A new frame is then overlaid on the stone brick below, showing the tile in its broken state



■ Like the portcullis sequence, there is actually only one frame for the **switch step**. The background incorporates the switch in its lowered position, and a sprite of the raised switch is overlaid on top. When the character stands on the switch, the overlaid sprite is deleted, making it look as if the step is lowered, and the portcullis begins to open

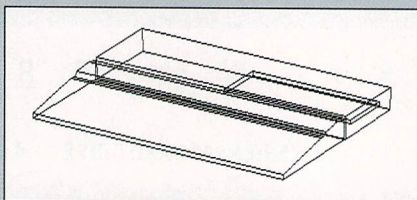
Now that you've seen how the professionals construct an animation, start putting their ideas into practice. Pick up your Cover Disk and turn to page 32 to see how to do it yourself!

A DIFFERENT PERSPECTIVE

Bitmap animation is one thing, but for total realism you need to use all three dimensions instead of two. There is, sadly, only one package which can do this on the ST, but thankfully it is simple enough to use and can produce spectacular results with a little time and effort. Antic's **CAD 3D** (£24.95, Electric Distribution $\square$ 0480 496666) enables you to create 3D images in memory, display them in colour and then save the display as a *Degas* picture.

3D is rather different from normal bitmap animation. Objects are stored in memory as sets of points in space, using three coordinate axes: X (left to right); Y (up and down); and Z (near and far). A square block needs a set of eight points or coordinates (one for each corner), plus information about which points are connected by lines and edges.

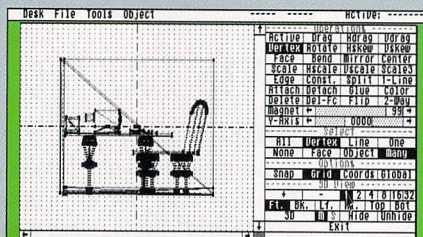
Once this information is stored, simple mathematics can be used to move or translate the object in space. Hidden lines are removed, again using simple maths to find out the closest edges, and then the object is shaded.



■ Using **Cyber Sculpt's** wire-frame test mode you can spin an object around, to look for flaws and check its appearance

Although **CAD 3D** is capable of all this, animation is a slow process. Even using its sister packages, **Cyber Sculpt** (a more capable object creator/editor), and **Cyber Mate** (a programming language which manipulates objects and tells **CAD 3D** to save the final images), a short 50 frame animation can take a whole night to complete. Initially you have to design the shapes themselves, using the editor. This is a matter of placing points on a grid, moving them around, connecting them and honing them until your shape is finished. All objects must be done one after another, then combined together to produce scenes. These scenes then need to be illuminated, using pseudo-lamps which you move around to produce the best lighting effect. Checking this can take hours, because you only know you've got it right after making **CAD 3D** render (draw in full-colour) a whole scene. If it's wrong, then you must re-light and re-shoot the scene.

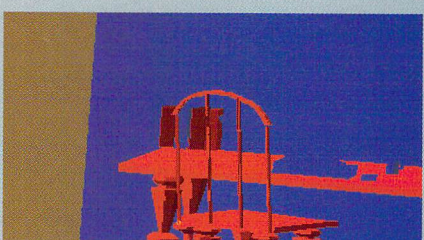
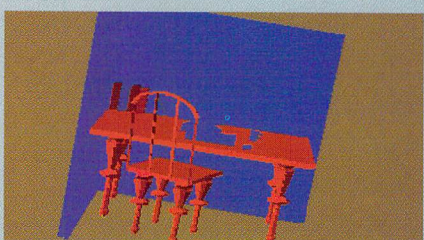
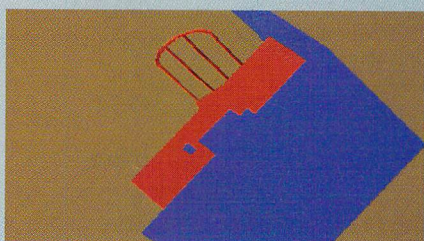
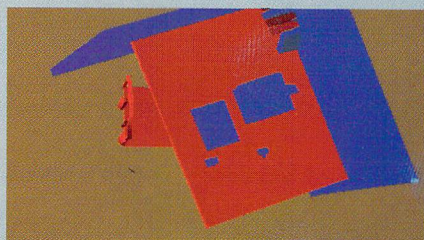
When lighting is correct, animation paths must be worked out and written down. Camera paths, lighting changes and object choreography must all be determined and then incorporated into the motion control language. A test is generally not feasible, since it takes so long to render each frame. Usually, the only way to tell that you've screwed it up is when you check all the pictures in the morning. Eventu-



■ **Cyber Sculpt's** object editor enables you to create 3D shapes which can then be exported to an animation package

ally, you can produce some stunning results, but you really know you've worked for them!

3D animation is becoming more widespread – it's on TV almost every day (look at the Channel 4 logo) – but it's incredibly difficult to do quickly. Because there are so many calculations involved, it's can't be done in real-time, at least not on your ST. But who knows? Less processor-intensive methods of storing and animating 3D shapes are being developed, like Constructive Solid Geometry, which uses simple equations to store complex shapes and can do things **CAD 3D** never even dreamed of. Maybe one day you'll be using it on your ST!



■ When you're finally happy with your 3D objects, you can use a motion control language to animate each frame and save the results as pictures. The string of pictures can later be combined into a short animation sequence which can be played back at 25 frames a second. This sort of 3D animation is a more complex beast, but can give a much greater feeling of perspective and realism than standard two-dimensional bitmap animation



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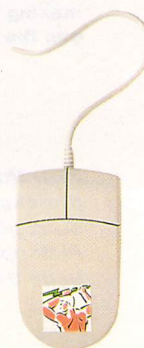
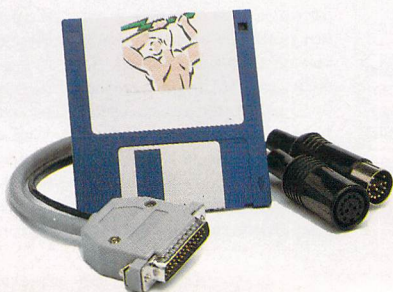
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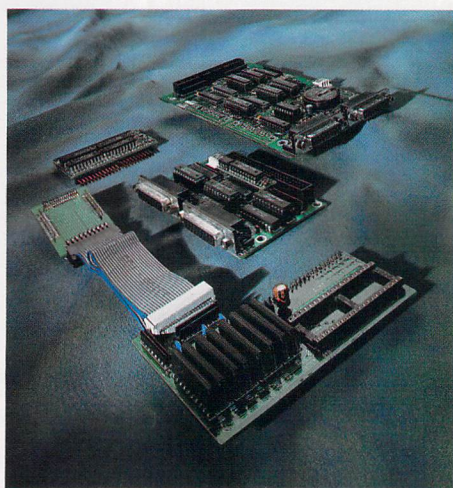
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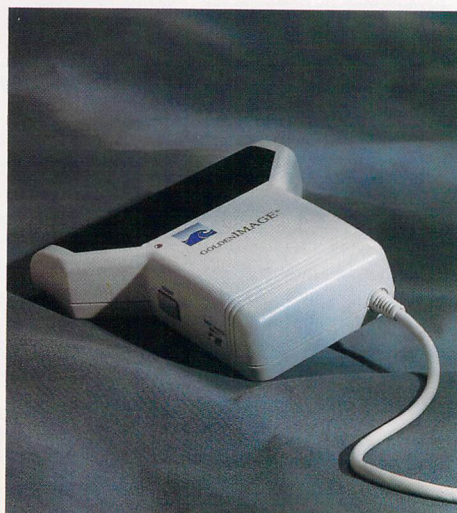
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On your Cover Disk, you'll find a program called *Animaster*, especially created for ST FORMAT by Homegrown Arts. It's an operational demo of a larger program which makes producing your own animation as easy as watching a Disney cartoon. With it, you can examine the way sprites work, learn how to control them, and produce your own animated sequences. It doesn't matter if you can't draw. By kind permission of Broderbund and Domark, we've included several example files containing the incredible *Prince of Persia* sprites. You can just load, click and watch the Arabian Prince leaping, running and jumping. If you wish, you can dig deeper and change him. You could have him dashing through his dungeons or darting over your Desktop! It's up to you!

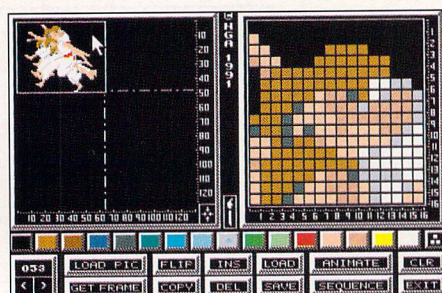
BUT HOW?

Easy! Just load up the *Animaster* program (see the Cover Disk Info pages, starting page 43, if you're not sure about this) and keep these pages handy. Read through the next few paragraphs while the program is loading and learn exactly what to do to get the Prince running. Have a play around and then carry on reading to find out how to change sequences and play on top of backgrounds. For the full lowdown, check out the panels for detailed information on the various features. When you want to take things even further and start creating your own sprites and sequences using *GFA BASIC 2* (which was yours free on Cover Disk 19), just move on to page 37. All you need is there.

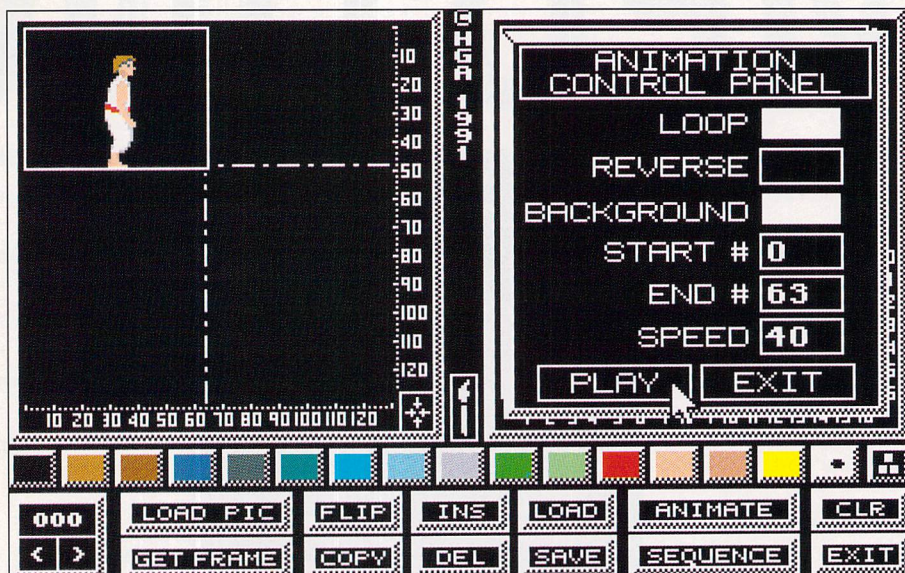
ON THE STARTING BLOCKS

When the program has loaded, you see *Animaster's* main workscreen. The two windows are the CURRENT SPRITE WINDOW and the ZOOM WINDOW. At the lower edge of the screen are several buttons which access *Animaster's* functions. For the quickest results, click on SEQUENCE and a large window opens up on top of the workscreen. On the right hand side is a button or icon marked LOAD. Click on this and load PERSIA.SEQ using the ST fileselector which appears. You are then asked if you wish to load a sprite file too – press YES.

When you're back at the SEQUENCE window again, move the pointer to the PLAY button on the left hand side of the display. *Be careful!* Make sure you get the left-hand PLAY icon, because there are two. You should use the one below the DELETE SEQ icon. The button remains highlighted and you must move the pointer to select one of the sequences listed in the top left-hand window. Click on RUN LEFT and



■ The COPY function in the full version of *Animaster* can produce "ghost traces" on overlaid sprites by using its MERGE option



■ Welcome to *Animaster*! Here, you can see the Animate function – which offers a quick way of testing sprite sequences and experimenting with their speed and movement

Animaster tutorial



The gift of life is the greatest gift of all, so give it to your ST! Using this guide and this issue's Cover Disk, you have the power to create the illusion of lifelike movement. Neil Jackson explains how...

the display switches back to the workscreen window. You should now see the Prince running on the spot in the CURRENT SPRITE WINDOW.

LEAP THE HURDLES

When you've seen enough of the running Prince, press the right mouse button to return to the SEQUENCE window. Experiment by clicking on PLAY again, and selecting another of the sequences. When you've seen them all click on EXIT to return to the main workscreen.

You can now experiment with a slightly different animation method which you'd normally use for quick "scratch-testing" when you design your own sprites. 520ST owners must first delete all the sprites from frame 14 upwards, using the DEL button on the workscreen. 1040 or Mega owners can leave them as they are.

Click on ANIMATE and you see a window open up over the ZOOM window. Highlight LOOP and BACKGROUND and then set the number in the START# box to six, by clicking the right mouse button on top of the figures to reduce them. Use the left mouse button to alter the END# figures until the number reads 13, and

then press PLAY. You are returned to the main workscreen view where the Prince is running fit to bust. But now you can move him around with the mouse. Fun, innit! The right mouse button stops things getting too much.

SPRINTING AHEAD

You've now seen the two primary animation functions of *Animaster*, but you're still only scraping the surface. You can play around with the START# and END# frame numbers to change the length of the sequence or set it running backwards by clicking on REVERSE.

For a more lifelike test, try setting up the ANIMATE function as for RUN LEFT, using the SEQUENCE lists as a guide. Then select LOAD PIC to load a background from the original *Prince of Persia* game. Choose DEGAS P?1 on the window (*Animaster* can load in both ordinary P?1 and compressed PC1 Degas picture files), and then select BACK_1.PC1 using the file-selector. The background picture loads and a rectangular frame appears on top of it. This would normally be used to grab a sprite and put it into the buffer – indeed, you can load in ➤

THE MAIN DISPLAY – AND HOW TO USE IT

■ *Animaster's* main workscreen is where you find all the major functions. Check out the panels to find out what they do

STATUS

Click on copyright to show the available sprite space, buffer size and sprite frame size

SCROLL SPRITE

(disabled in this demo)

This tool scrolls a sprite in a chosen direction, wrapping it around when it reaches a frame edge. The central arrow moves the sprite image to the centre of the frame

CURRENT SPRITE WINDOW

This is the sprite in the buffer. It's also the place where some test animations take place. White lines denote boundaries of the sprite block which are saved with each sprite

ZOOM WINDOW

This window shows the area under the pointer magnified several times. It works only when the pointer is over the CURRENT SPRITE WINDOW or if it's been locked in place (see the DRAWING TOOLBOX)

COLOUR PALETTE

These are the 16 colours in use. The dot indicates the current drawing colour. This can be changed by clicking on a new colour, or on the right button over a colour in the ZOOM WINDOW

COLOUR MIXER

This creates new colours for the PALETTE. The dotted colour is the one in use. Alter the red, green and blue levels using the sliders

DRAWING TOOLBOX

(disabled in this demo)

The paintbrush works only if the ZOOM WINDOW has been locked to the CURRENT SPRITE WINDOW. Do this by placing the small box over the top of the sprite in the CURRENT SPRITE WINDOW and pressing the left mouse button. The box stays put, and you can move the pointer without changing the ZOOM WINDOW. Now click on the paintbrush and a DRAW TOOLBOX appears. There are several painting, drawing and filling functions which enable you to create your own sprites from scratch. You can unlock the ZOOM WINDOW by clicking the right button when the pointer is back in the CURRENT SPRITE WINDOW. The drawing functions are disabled, because this is a demo of *Animaster* – for the full version see Mail Order, page 150



INS/DEL

(INS is disabled in this demo)

Used to delete sprites or insert blank sprites in a sequence. You can work on one or all sprites, using the window which appears. Here, DEL enables 520 owners to create space to animate over a background

ANIMATE

This displays an animation on the workscreen or over a backdrop. LOOP repeats the animation, REVERSE makes it run backwards, and BACKGROUND runs it over the workscreen or a loaded piccie. Use left and right mouse buttons to increase or decrease the START and END frames. PLAY makes things move

LOAD PIC

Use this to load in a picture for cutting up and using as sprites or for use as a background. Select the correct picture type from the list and then load your picture using the fileselector.

To cut a sprite, move the frame box around with the mouse until your desired sprite is enclosed. You can change the size of the frame using the keyboard arrow keys. Click the left button when you want to grab a sprite. You can then tell *Animaster* to cut as many sprites as possible from that picture, using the AUTO button, or just cut another single sprite by pressing YES. NO returns you to the workscreen with the newest sprite visible

CURRENT FRAME INDICATOR

This shows the number of the sprite shown in the CURRENT SPRITE WINDOW. You can click on the arrows to move to the next or previous sprite in the buffer and update the window. Use the left button to move along frame by frame, or the right button to move in steps of five frames

GET FRAME

If you've already loaded a picture and you want to cut out some more sprites from it, use GET FRAME. It works in the same way as LOAD PIC, but without loading

LOAD/SAVE

These buttons load and save sprite files from disk. Sprite files should end in the suffix .ASB or .MSK. Sprite files contain just the bitmap images of the sprites, stored one after the other. They do not contain any sequence information

EXIT

What? Leave *Animaster*? You must be kidding!

CLR

Use this to clear a sprite frame (or group of frames) but leave the buffer space intact. This differs from DELETE, which closes up the gaps when a sprite is deleted

FLIP

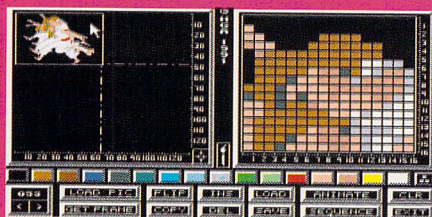
(disabled in this demo)

You would use this to turn a sprite upside-down or flip it from left to right in its frame

COPY

(disabled in this demo)

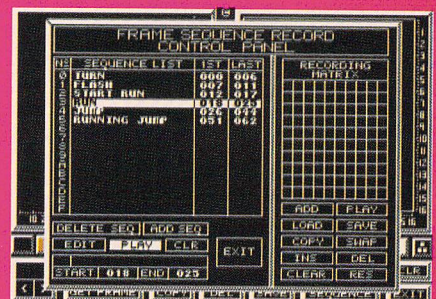
This copies one sprite to another position in the sprite buffer. It can completely obliterate the old image that was there, or MERGE on top of it, leaving a double-image (which can be invaluable for judging the degree of change from one sprite to the next, thus checking the motion is smooth).

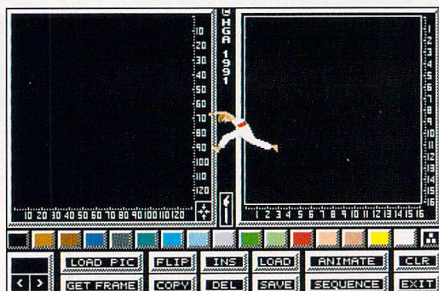


SEQUENCE

(partially operational in this demo)

This button brings up a large window with two main displays: the SEQUENCE list and editor and the RECORDING MATRIX. The list shows groups of sprites which have been bundled together to form sequences. These can be altered by clicking on EDIT and then clicking on the sequence name in the list. The boxes below ask you for a sequence name and its start and end frames. ADD SEQ creates a new sequence in the same way while DELETE SEQ removes a chosen sequence from the list. CLR removes all the sequences from the list (use with care!). To test a sequence, press PLAY and click on your chosen sequence.





■ With Animaster you can make the *Prince of Persia* sprite leap across your work-screen and trample all over your icons!



■ To check the realism of your animation, you can overlay it on top of a background (also supplied) to see how well it works

your own sprites drawn in an art package like Neochrome (part of the ST FORMAT Graphics Collection – see page 150). For now, just click the right mouse button to return to the work-screen without cutting out a new sprite.

Click on the ANIMATE function again and select LOOP, BACKGROUND and check that the START# and END# markers are still correctly set. This time when you press PLAY you are given a choice of PIC or SCREEN. Select PIC and the animation takes place on top of the dungeon background. You can still move the Prince around using the mouse, and normally you'd use this to gauge how far the sprite should move between frames to get the motion right. Experiment with the other backgrounds until you want to move on.

TAKE THE LEAD

That's it for the tutorial part. Now it's up to you. You know how to load sequences, how to animate them in two different ways, and how to use backgrounds. We've touched briefly on sprite-grabbing and it's child's play to grab some new ones from your own pics. All that remains is to read the boxes on these pages to find out a few more details on the various functions, before moving on to the GFA Basic 2 demo (page 36) to see how you can use the sprites and sequences in your own programs.

And don't forget, this is only a demo version of Animaster. The finished program has all the disabled features up and running, enabling you to draw and INSERT new sprites, COPY sprites to new positions, and much more. If we've whetted your appetite, you can order a copy of the full program from our Mail Order pages – see page 150. With this, your copy of GFA Basic 2 and a bit of imagination, you can give Hanna-Barbera a run for their money! **stf**

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TEN TIPS FOR DYNAMIC ANIMATION

1. The secret of making your animation look really dynamic is – exaggeration! If a character falls over, make it a real arms-flailing, legs-spinning, tail-over-top type of fall. Always follow through every movement and make it a grand, sweeping gesture. Extremes are best; inhibited little moves are not good animation.

2. But, you ask, how do I follow through a movement? The key is what animators call the line of action. The illustration bottom right shows the line of action running through one of the *Prince of Persia* sprites. Think of it as the centre line along which the character moves, or where the “speed lines” go, showing the direction of the movement. In good animation, the line of action must be as sweeping and smooth as possible – because that means the action itself is clean and smooth.

3. Another way to make movement look dynamic is to use what's called the “stretch-and-squash” principle. Bounce a simple ball and the movement looks very boring, but squash the ball at the moment it hits the floor, then stretch it as it flies away, and the whole thing gains extra life and vitality. Keep your eye out for this trick in professional animation – Tom and Jerry do it all the time.

■ This drawing of a totally original, uncopyrighted cartoon character demonstrates how you can construct figures from geometrical shapes (tip 4) – this helps you think of them as three dimensional and keep proportions right

4. Think of the characters you draw as being made up of solid objects – like spheres for their bodies and cylinders for their arms and legs. That's actually how real animators draw them. They're never done freehand, the way Rolf Harris does them on TV – that's actually one of the reasons he can never get them to look quite right. And – guess what? – constructing them like this means it's easy to apply the principles of “stretch-and-squash” to your characters. Again, Tom and Jerry demonstrate this all the time.

5. To give individuality to your characters, don't be afraid to exaggerate their appearance too. Drawing realistic human beings is actually one of the hardest things to tackle, so why not keep them cartoony? To make a character “cute,” give it big eyes – generally, the bigger the cuter. (Try it!) “Tough” characters should have big square jaws, small eyes and low foreheads. Remember that their bodies too should

fit their personalities – cute characters have big heads and small, child-like limbs, tough guys big barrel chests, long gorilla-like arms and short (preferably bowed) legs.

6. Movements too should be in character – this is one of the most important ways of conveying personality. Cute characters tend to toddle along, tough guys stalk with their shoulders swinging. Imagine you are the character yourself – how would you walk?

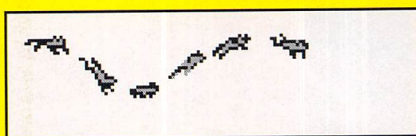
7. The secret of getting expressions right is – use a mirror. Professional animators always have one by their desks for making faces into.

8. Hands can be very complex things to cope with, so do what the professionals do. Look closely at Mickey Mouse or any other well-known character – he's only got three fingers! What's more, he's wearing those silly white gloves – which actually make his hands clearer and more prominent. For most purposes you really need only three hand positions – open, clenched and something in between.

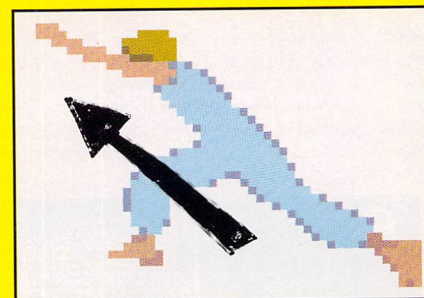
9. Let's say you want to show a character walking into a room. Ask yourself whether you want the audience to feel as if they're walking in with him or watching him come in.

The natural direction of reading (in the western world, anyway) is left to right, so if you have someone walk in from the left, the eye follows him in – and thus comes in with him, while if you have him enter from the right the effect is as if you were already inside and watching him enter. Look at this issue's cover in the mirror and see if this alters the impression you get.

10. To get the change from one frame to the next just right, professional animators frequently take three or four drawings in hand and flick between them, or place one drawing over another and quickly flick the top one off and back on again. In our Animaster demo, you can effortlessly do the same by flicking between sprites with the small arrow keys at the bottom left of the workscreen. In the full version you can MERGE with the COPY function. Either way, do this regularly to check that you're getting the effect you want.



■ This jumping frog – from an animation sent in by a reader (see page 98) – illustrates stretch-and-squash (tip 3) at work



■ The line of action (tip 2) is the axis along which the movement takes place – the figure at its most dynamic follows it

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Moving

*You've designed your sprites. Now
put them to use in your own
programs. Neil Jackson
explains how to animate
in GFA Basic 2*



To make any animation
sequence work for you in
your own programs, you
need to be able to include routines
which can show your animation. On
this month's action-packed Cover
Disk is the complete package to
display sprites and animate them
across a background.

GFA2DEMO.BAS is the file you
need. This GFA Basic 2 program
animates the Prince of Persia
sprites included on the Cover Disk
and makes them move across
backgrounds, also provided on the
Cover Disk in Degas Elite format.
(For details of what's on the Cover
Disk see page 32. And for more
about "masks," turn to our guide to
programming in assembly lan-
guage on page 113.)

With this GFA Basic 2 program
and a little ingenuity (not included),
you can take your own sprites cre-
ated in Animaster and run them
over your own backdrops. Now
start playing with the program itself
- add joystick routines, other char-
acters and some collision detection
- in short, turn these raw materials
into your own complete game! The
only limit is your enthusiasm.

Block 1

This is where the program ini-
tialises (gives starting values to) its
main variables. F% is the current
sprite frame number, Sf% is the
start frame of a sequence, Ef% is
the end frame. Distance% is the
amount that the sprites are moved
between frames. X% and Y% are the
initial positions for the first sprite.

Block 2

Two screens (Tv1% and Tv2%) are
created in memory, one to be dis-
played and one to be worked on
invisibly. Buffer arrays are created
to hold the backdrops and the
mouse is hidden.

Block 3

The first backdrop is loaded into
one of the buffers and its colour

palette is located and copied to the
screen colours.

Block 4

The next three backdrops are
loaded into their buffer arrays.

Block 5

Using the Frame_load subroutine
(described later), the sprite bitmap
files are loaded into arrays. There
is an array each for the Prince
sprites, the Prince masks, the flame
sprites and the flame masks.

Block 6

The main loop starts here, and is
returned to if no key is pressed.
The first backdrop is copied to the
displayed and undisplayed screen
using the Setup subroutine
(described later). The flame sprites
are used on this screen, so a flag is
set to indicate this. Coordinates for
the flame sprites are set up and the
start and end frames of the Prince
are similarly noted. Then the Anim
subroutine (described later) is
called to animate the screen.

Block 7

Using the same theory, backdrop
number two is shown. This time
there are no animated flames so the
flag is cleared. Anim is called again.

Block 8

Same again, but different! Flames
are back on, so the flag is set and
the coordinates initialised. The
frame indicators are set, but they
change during the Anim subroutine

Block 9

Last screen, but uses same sys-
tem. Flames are still on, because
flag is untouched and new coordi-
nates are set up. The start and end
frames are initialised again
(because they changed a moment
ago), and the Anim subroutine is
called for the last time this loop.
Upon return, the keyboard is
checked and if nothing is pressed
we go round again. If a key was
held down (now or during any of
the four screens) the program goes
on to the instruction after the end
of the loop. In this case it's

it with GFA



Terminate, the program-ending subroutine (described later).

Block 10

The Anim procedure (subroutine) does most of the actual display work. It loops, during which time it switches to the hidden screen, prints the flame masks followed by the flame sprites and then prints the Prince's mask and sprite. Checks are made to see if the end frame has been exceeded, and the next horizontal position of the Prince is calculated. The hidden screen is then displayed (and vice-versa).

Block 11

A special case handles screen three, which has the Prince jumping. If the Prince is between two trigger positions, then his start and end frames are different. A jump flag is set to "on" and the distance he moves between frames is increased. If the end frame of the jump sequence is reached, the jump is deemed to be complete, the jump flag is cleared and the Prince reverts to the normal sprite sequence. A final test checks to see if the sprite position is off-screen. If it is, the Anim loop is quit, the horizontal position is reset and the program returns to the main loop.

Block 12

The Flip subroutine waits for the beam on the TV picture to get to the top then redirects the ST to a different screen. Flip is given parameters by the calling routine which determines which pictures are flipped.

Block 13

The Frame_load subroutine opens a file (a sprite or mask file) and scans it to find out the number of frames in the file, the length of the file, and the sprite width and height. It then creates an array into which it stores the bitmap images, one after the other. Upon exit, this array is transferred to the name sent by the calling routine.

Block 14

This subroutine, Setup, prints the demo message at the bottom of the screen and initialises the hidden and displayed screens. It uses the flip routine to swap the screens around, while it copies the current background picture to the hidden screen.

Block 15

The Terminate subroutine cleans up the display on exit from the main loop. It reverts the background and foreground colours to black and white, so that you can read the display when you return to GFA BASIC 2's editor screen. **stf**

THE COMPLETE PROGRAM EXPLAINED

```

BLOCK 1
Cls
Speed%=30
F%=0
Sf%=6
Ef%=13
Distance%=0
X%=250
Y%=73

BLOCK 2
Defmouse 2
Dim Pic$(32255/4)
Tv2%=(Varptr(Pic$(0))+255) And &HFFFF00
Tv1%<Xbios(3)
Dim B$(32066)
Buf1%<Varptr(B$(0))
Buf2%<Varptr(B$(32066/4))
Buf3%<Varptr(B$((32066*2)/4))
Buf4%<Varptr(B$((32066*3)/4))
Hidden

BLOCK 3
Bload "a:\animastr\back_1.pil",Buf1%
M%=0
For N%=2 To 32 Step 2
Setcolor M%,Dpeek(Buf1%+N%)
Inc M%
Next N%
Setcolor 0,0,0,0
Setcolor 15,7,7,7

BLOCK 4
Bload "a:\animastr\back_2.pil",Buf2%
Bload "a:\side_2\moreanim\back_3.pil",Buf3%
Bload "a:\side_2\moreanim\back_4.pil",Buf4%

BLOCK 5
@Frame_load("a:\animastr\PERZIA.ASB",*Frame$())
@Frame_load("a:\side_2\moreanim\PERZIA.msk",*Frame_m
ask$())
@Frame_load("a:\animastr\flames.ASB",*Frame$())
@Frame_load("a:\animastr\flames.msk",*Flame_mask$())

BLOCK 6
Do
Bmove Buf1%+34,Xbios(3),32000
@Setup
Flames!<True
Flame1_x%=197
Flame1_y%=64
Flame2_x%=133
Flame2_y%=64
Scr%=1
Sf%=6
Ef%=13
@Anim

BLOCK 7
Bmove Buf2%+34,Xbios(3),32000
@Setup
Flames!<True
Flame1_x%=38
Flame1_y%=64
Flame2_x%=69
Flame2_y%=64
Sf%=6
Ef%=13
Scr%=3
@Anim

BLOCK 8
Bmove Buf3%+34,Xbios(3),32000
@Setup
Flame1_x%=197
Flame1_y%=64
Flame2_x%=102
Flame2_y%=64
Flames!<True
Sf%=6
Ef%=13
Scr%=4
@Anim
Exit If Inkey$<>" "
Loop
@Terminate

BLOCK 9
Bmove Buf4%+34,Xbios(3),32000
@Setup
Flame1_x%=197
Flame1_y%=64
Flame2_x%=102
Flame2_y%=64
Flames!<True
Sf%=6
Ef%=13
Scr%=4
@Anim
Exit If Inkey$<>" "
Loop
@Terminate

BLOCK 10
Procedure Anim
Do
@Flip(Tv2%,Tv1%)
Sput Mainscr$
If Flames!
Put Flame1_x%,Flame1_y%,Flame_mask$(X%),1
Put Flame1_x%,Flame1_y%,Flame$(X%),7
Put Flame2_x%,Flame2_y%,Flame_mask$(X%),1
Put Flame2_x%,Flame2_y%,Flame$(X%),7
Inc X%
If X%>1
X%=0
Endif
Endif
Put X%,Y%,Flame_mask$(Y%),1
Put X%,Y%,Flame$(Y%),7
Inc Y%
If Y%>EF%
Y%=Sf%
Endif
Sub X%,Distance%
If Y%>3
Distance%=8
Endif
Swap Tv2%,Tv1%

BLOCK 11
If Scr%=3 And X%<194 And X%>70
Sf%=14
Ef%=31
If Jumptest!<False
Jumptest!<True
F%=14
Distance%=20
Endif
Else
If F%=31
Jumptest!<False
F%=7
Distance%=8
Sf%=6
Ef%=13
Endif
Exit If X%<-70
Loop
X%=280
Return

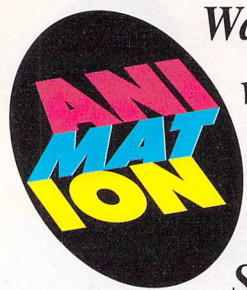
BLOCK 12
Procedure Flip(X%,Y%)
Vsync
Void Xbios(5,L:X%,L:Y%,-1)
Pause 4
Return

BLOCK 13
Procedure Frame_load(File$,F%)
Open "I",#1,File$
Frames_created%<Cvi(Input$(2,#1))
Length%<Cvi(Input$(2,#1))
Icon_w%<Inp(#1)
Icon_h%<Inp(#1)
Dim F$(Frames_created%)
For N%=0 To 15
Dummy%<Cvi(Input$(2,#1))
Next N%
For N%=0 To Frames_created%
F$(N%)<Space$(Length%)
Bget #1,Varptr(F$(N%)),Length%
Next N%
Close #1
Swap *F%,F$()
Erase F$()
Return

BLOCK 14
Procedure Setup
Deftext ,,,4
Text 2,196,"Prince Of Persia Animation Demo Running
In GFA Basic!"
Sget Mainscr$
@Flip(Tv2%,Tv1%)
Sput Mainscr$
@Flip(Tv1%,Tv2%)
Return

BLOCK 15
Procedure Terminate
@Flip(Tv1%,Tv1%)
Setcolor 0,7,7,7
Setcolor 15,0,0,0
Edit
Return

```

Want to see professional animators at work? ST FORMAT and Empire offer one lucky reader the chance to win a fabulous trip for two to the Sullivan Bluth Studios in Dublin

Visit the professional animators

Dublin-based Sullivan Bluth Studios created such Disney-rivalling animated cartoons as *All Dogs Go To Heaven*, *Land Before Time* and *An American Tail*. Now in true Willy Wonka fashion, they're opening their doors to one lucky reader and a friend.

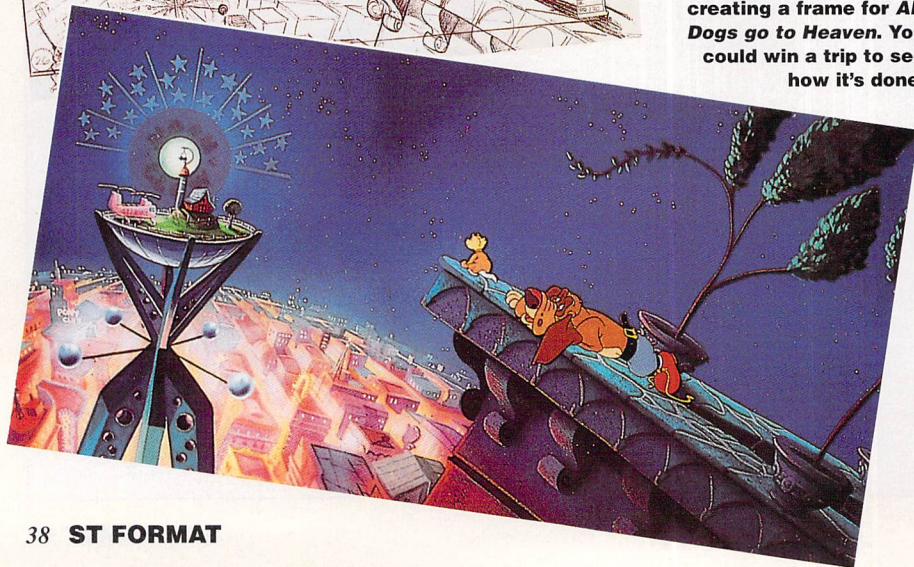
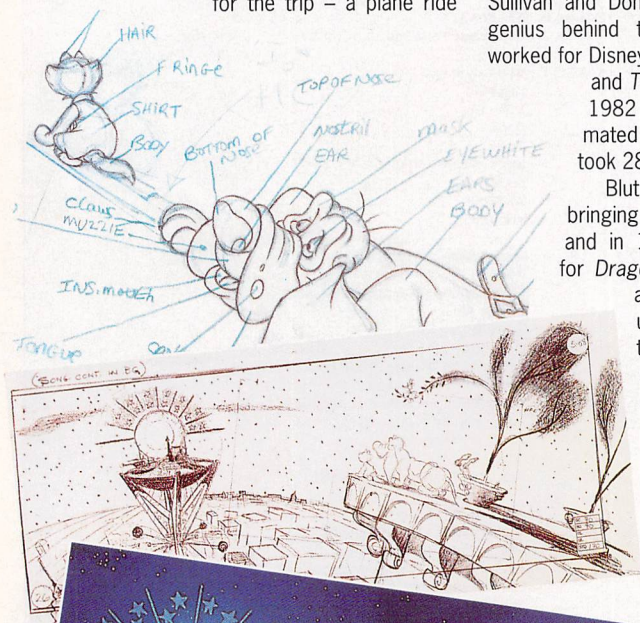
You'll get the complete VIP treatment for the trip – a plane ride

out to Dublin, a limousine to take you to the Studios and a guided tour to see exactly how an animated film gets made. After an overnight stay in the city of Dublin, you'll be flown in pristine condition back home.

The Sullivan Bluth Studios came about as the direct result of a collaboration between Morris Sullivan and Don Bluth. Bluth is the animation genius behind the company – he originally worked for Disney on *Robin Hood*, *Pete's Dragon* and *The Fox and the Hound* but left in 1982 to start work on his own animated film, *The Secret of NIMH*, which took 28 months to complete.

Bluth has always been interested in bringing animation onto the computer and in 1977 began making sketches for *Dragon's Lair* – the first laser disk arcade game, which was unveiled at the Chicago Entertainment Show in 1984. His second arcade release, *Space Ace*, soon followed. The magnificent visuals in these games were created by digitising hand-drawn sketches. These

■ The stages involved in creating a frame for *All Dogs go to Heaven*. You could win a trip to see how it's done!



IT'S THAT QUESTION

Below are three screenshots from superbly animated games. They've spent an afternoon in the surgeon's chair to make it difficult for you to recognise them. Guess the identity of each game and write them down on the back of a postcard

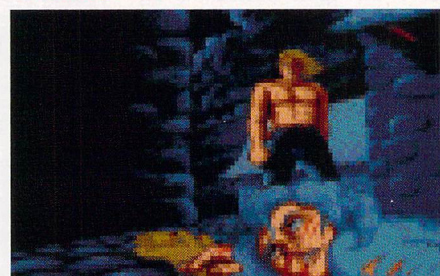
Game 1



Game 2



Game 3



were then coloured within an art package and extra details added. To create perfect animation using such large characters, hundreds of frames had to be drawn and then put onto an ST.

Don Bluth and his team of animators are currently working on an animated film called *Rock-a-Doodle*. If you win, you could get the chance to see the cartoon in its development stages. Just work out the answer to the question, jot it on a postcard and send it to Animated Dreams, ST FORMAT, 29 Monmouth Street, Bath, BA1 2BW by Friday 19 April. By the end of the month you could be winging your way to sunny Ireland! **stf**

RULES

1. Employees of Entertainment International, Readysoft, Sullivan Bluth Studios and Future Publishing and their families are not eligible to enter this competition.
2. This competition is open only to people who are resident in the British Isles or who will be resident in the British Isles at the closing date of the competition.
3. Entries must be received by Friday 19th April and not a moment later.
4. Multiple entries are going to be shredded.
5. All the competition entries become the property of Future Publishing.
6. No cash alternatives can be offered.
7. The Judge's decision is final.



The first Stereo Sample adaptor for the ATARI ST, STF & STFM

WHAT IS PLAYBACK?

PLAYBACK is a neat hardware cartridge which plugs into the ROM port of any 16 BIT ATARI computer and provides 2 channel (Stereo) sample output from its twin RCA style phono connectors. These signals can then be fed into any standard LINE or AUX input of a HI-FI amplifier for truly stunning stereo output when running programs compatible with this cartridge. The cartridge avoids using the much slower printer port and subsequent lower sound quality, the cartridge port places no practical limit on the top band width of sound quality.

PLAYBACK enables the owner of a standard ST, STF or STFM computer to take advantage of the new breed of Stereo software which is starting to appear for the ATARI 16 BIT computers. It remains a commitment of MICRODEAL to maintain compatibility across their range of musical products wherever possible. To this end, PLAYBACK offers a superb, low cost enhancement to QUARTET version 1.5, the worlds first and best professional multi voice sample sequencer for the ST. PLAYBACK provides QUARTET version 1.5 owners with the ultimate in high quality STEREO music for the first time. Obviously owners of MONO samplers such as MASTER SOUND II, REPLAY 8 and REPLAY PROFESSIONAL can take advantage of the two channel outputs to create even more stunning effects in their own programs or with DRUMBEAT STEREO included with this package.

As well as the PLAYBACK cartridge, this package contains the following:

DRUMBEAT STEREO

PLAYBACK provides a sophisticated 2 channel DRUM sequencer which allows up to 15 samples to be loaded into the KIT. DRUMBEAT provides up to 50 patterns in memory at once. The patterns may be assembled into a list of up to 99 ordered entries to compose a SONG and up to 10 songs may be held in memory at once. The TEMPO can be varied from 40 to 239 beats per minute either internally or externally via an external MIDI system master control. Timing can be set at 1/8, 1/16 or 1/32 with or without triplets.

QUARTET STEREO DEMO DRIVER

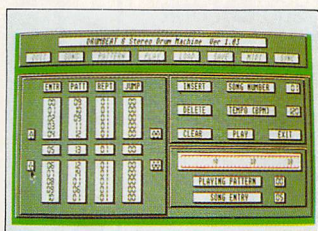
One of QUARTETS top mono music demo's has been adapted to give full STEREO output with two left channels and two right channels. The graphics display is easily adaptable using a paint program to customise your own graphics and the Scrolling message can be changed by simply editing the file using an editor or word processor. The STEREO Quartet music played with the demo is one of our latest mixes and if you have your own Quartet music you can replace our music very easily with your own.

INCORPORATE STEREO OUTPUT IN YOUR OWN PROGRAMS

We've thought of everything for the home programmer and have included sample STEREO routines for Hi-Soft Basic, GFA Basic and machine code, and before long we are sure many commercial products will support this high Quality STEREO cartridge which brings a regular ST owner STEREO output similar to the STE.

FULL QUARTET VERSION 1.5 SUPPORT

If you are thinking of upgrading to Quartet version 1.5 or already have a copy then STEREO PLAYBACK is fully supported with 2 channel output through each speaker and playback as clear as your regular hi-fi output!



DRUMBEAT STEREO



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QUARTET DEMO DRIVER

ATARI ST

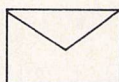
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- PLUS - exclusive to Dowling**
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protars' 40 DC, 80 DC and 160 DC models are additionally equipped with a 64 kB cache memory integrated on the hard disk; this cache memory reduces disk accessing times by up to 50%.

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Side 1

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HILLBILLY MOONSHINE RACERS – Push the pedal to the metal with a truckload of moonshine and the Feds on yer fender in Millennium's new race-'n'-chase game.



Side 2

GODS – Ye gods! A huge, one-off, extra-special bespoke edition of the new game from the Bitmap Brothers – and they do have a bit of a rep when it comes to *big* games!

GFA BASIC 2-TORIAL 3 – Twelve programs for Part Three of *FORMAT's* special GFA Basic 2 tutorial series.

LARGE, OR WHAT?

On this month's action-packed Cover Disk, there are more pictures, sprites, sequences and techie-trickery than ever before! To achieve this, we use file-crunching techniques and disk formats that are so advanced they double as professors in their spare time. A massive 1,000K (approximately) has been folded, twisted, levered and jemmied onto this hyper-animated *ST FORMAT* Cover Disk.

ON THE SIDELINES

Sadly, the earliest 520STs were fitted with single-sided disk drives, meaning they couldn't read double-sided disks – until now. The *ST FORMAT* Cover Disk has been specially prepared to enable *all* ST owners to read at least Side 1. Now is that nice of us or what?

ALL YOU NEED IS HERE!

Thanks to the non-standard disk format by *ST FORMAT's* favourite mad inventor, Rob Northern, everyone can load and use *Animaster* and *Hillbilly Moonshine Racers*. Double-sided drive owners are luckier than a very lucky thing, for they can also access *Gods*, *Animaster* extras and the Basic tutorial.

DOING THE DOUBLE

To read Side 2 with a double-sided drive just double-click the left mouse button on the folder named *SIDE 2*. It should open up like a normal folder, listing all the files contained within.

IS YOURS A BIT ONE-SIDED?

If you have a single-sided drive and you try opening the *SIDE 2* folder, you see an alert message telling you that the data on the disk may be damaged. This is just the ST's way of telling you it can't read Side 2. Don't fret, just click on *CANCEL* and you'll be okay.

TAKE YOUR VIRUS MEDICINE

Before you bung it in, back it up! Accidents can happen and you could lose the lot, so make a copy of the Disk and write-protect the original before you put it in your drive to be absolutely safe. (That is, move the tab so you can see through the little hole.) Write-protect the copy too – that's the safest way to stop it picking up nasty, horrible, slimy viruses from other disks.

If you don't do this, don't come crying to us after the worst happens. We'll only say we *did* warn you.

FAULTY DISK?

In any disk duplication as earth-shatteringly, fabulously large as *ST FORMAT's*, it's possible that a tiny proportion of disks might be faulty. If you're unlucky, sorry.

You're guaranteed a free replacement if you send your disk to *ST FORMAT* April disk returns, 29 Monmouth Street, Bath, Avon BA1 2BW.



ANIMASTER

BY: HOMEGROWN ARTS

SIDE: 1 AND 2

MACHINE: ALL COLOUR STs (LOW RESOLUTION)

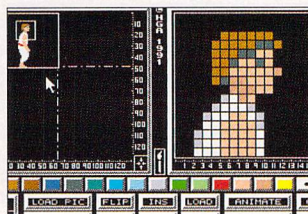
FOLDER: (side 1) ANIMASTR (side 2) MOREANIM

FILES: (on side 1)

ANIM_DEM.PRG, ANIM_1.OVL, ANIM_2.OVL, GFA2DEMO.BAS, BACK_1.PI1, BACK_2.PI1, PERSIA.SEQ, PERSIA.ASB, FLAMES.ASB, FLAMES.MSK

(on side 2) BACK_3.PI1, BACK_4.PI1, PERSIA.MSK

This month, *ST FORMAT* proudly presents *Animaster*, an animation package which can help you to create animation on your ST. This



■ This is the workscreen on which you can create life!

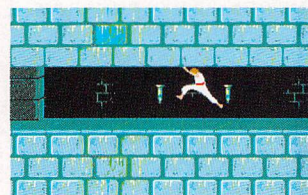
partly-operational demo is the subject of the animation tutorial on page 32, where you'll find a step-by-step guide and an in-depth study of the features.

Because *Animaster* is so large, we've had to break from the usual traditions of *ST FORMAT* Cover Disks. You'll find the majority of associated files in the ANIMASTR folder on Side 1 of the Disk, but you'll also find three other files on Side 2. We've had to do it this way so that single-sided drive owners can partici-

pate in the tutorial and get the *GFA Basic* demo animation program to work too.

STARTING OUT

Copy all the files to a blank disk and then just double-click on ANIM_DEM.PRG to load the animation demo. Then turn to page 32 for the tutorial, which shows you how to create moving pictures using images from Domark's outstanding *Prince of Persia* game. These images, plus four backgrounds from the game's dungeon level, are ➤



■ Also included are all the backgrounds you need



HILLBILLY MOONSHINE RACERS

BY: MILLENNIUM

SIDE: 1

MACHINE: ALL COLOUR STs (LOW RESOLUTION)

FOLDER: MOONSHIN

FILES: MOONSHIN.TOS

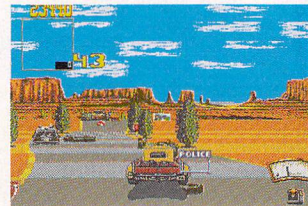


■ Some characters you meet could drive anyone to drink!

extra cash, so they decide they're going to get it by ferrying moonshine whisky to ol' Tucker, the moonshine man. But the boys reckoned without Fat Sam the Sheriff, who's determined to stop smuggling on his patch.

Hold onto your hat as you join the boys in a cross-country

chase along the highways and byways, trying to shake Fat Sam off their tail and be the first to deliver the moonshine to Tucker's hideaway. In this exclusive *ST* ➤



■ Git goin' – and show them Dukes of Haphazard yer dust



GODS

BY: RENEGADE

SIDE: 2

MACHINE: ALL COLOUR STs (LOW RESOLUTION)

FOLDER: GODS

FILES: GODS.TOS (plus 20 other data files – phew!)

The Gods have laid down a challenge to humanity: rid their once fabulous city of evil and they'll give you a seat upon Mount Olympus, amongst the Gods themselves, verily. Armed only with

what you can find and put to use, you must fight your way through many levels of danger before claiming your just rewards.

ST FORMAT presents a unique demo version of the Bitmaps' platform puzzler, especially created for this issue. It comprises a complete level, but this level is unlike any you'll find in the full-blown game. To give you a taster, but without spoiling your appetite, the Bitmaps have engineered a variation of the game, using some of the enemies, potions and puzzles from the original, but with subtle twists.

The objective in this version is to return three holy items to the crypt. Hints pop up during the

game to inform you what these are, so we won't spoil it by telling you! The holy items are scattered through the level, but it's down to you to find them – and the crypt itself.

During your quest you meet many strange types of ➤



■ Tools and weapons are there to help – but where?

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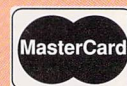
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Prop M. J. Cooper

GFA BASIC 2-TORIAL 3

BY: JAMES BESWICK

SIDE: 2

MACHINE: ALL COLOUR STs
(LOW RESOLUTION)

FOLDER: BASICUT.003

FILES: see below

These programs are for Part Three of *FORMAT's BASIC* tutorial series – see page 131. To use these, you must have *GFA Basic 2*, which was yours free on Cover Disk 19. If you missed that, turn to page 142 for the *FORMAT* back issue service.

BASIC programs

ALERTBOX.BAS, ANIMATE.BAS,
DEMO_I.BAS, DEMO_II.BAS,
DEMO_III.BAS, DEMO_INT.BAS,
EXIST.BAS, FOR_NEXT.BAS,
IF_ENDIF.BAS, POINTER.BAS,
POINTER2.BAS, ROUTINE1.BAS,
SPRITES.BAS.

Data ANIMATE.DAT, MOUSE.DAT

BACK UP YOUR DISK!

ST FORMAT's Cover Disk is non-standard and squeezes in a whopping great 700K+ of data per side, so the back-up procedure is not simple. Follow these steps, though, and you won't encounter any problems. Do it any other way and you could mangle your Cover Disk. And then where would you be?

1. Format a couple of blank disks (you may not get all the data onto one) – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive.
2. Write-protect the original Cover Disk and insert it into the drive (if you have two drives, you lucky devil, insert the Cover Disk into drive B). Double-click on the drive B icon to open a window showing the Cover Disk contents. If you haven't got a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK.
3. Insert a freshly formatted disk into drive A. Double-click on the drive A icon and open up a window. You may be asked to insert disk A in drive A – you just did, so click on OK again.
4. Highlight each folder in the drive B Cover Disk window and drag them into the drive A window, one at a time.
5. If you have one drive, you're asked to insert disk A and disk B at regular intervals. Don't mix the two up! Disk B is the Cover Disk and disk A is the freshly formatted disk.
6. When you get a "disk full" error message, recopy the last folder – and subsequent folders – onto the second freshly formatted disk.
7. Double-sided owners, double-click on *SIDE_2* once you've finished copying all the folders from Side A of the Cover Disk and carry out the same procedure for those on Side B. Job done!
8. Don't forget, you must not try and use the standard Atari disc copy function (dragging floppy A onto Floppy B) – it won't work.

ANIMASTER continued

included on the Cover Disk too, along with the sprite-masks and sequence files you need. Make sure you copy these along with the *ANIM_DEM* program, or you won't have anything to do!

Once you've mastered the

Animaster package, you might want to know how you can write your own programs to create your own, original animations. Also included in the folder is *GFA2DEMO.BAS*, which is a *GFA Basic 2* program listing. Full details of the program's secrets

can be found on page 37. You'll need to dig out your Cover Disk from issue 19 which contains the *GFA Basic 2* interpreter you need to run the the *GFA2DEMO.BAS* program. (If you missed that issue, see page 142 for information on ordering back issues.)

HILLBILLIES continued

FORMAT demo, Millennium have put together a taster of the action found in the full version of *Hillbilly Moonshine Racers*. Dodge your way around the tumbleweed, pot-holes and roadblocks and keep a good look out for the tell-tale signs of police presence.

Avoid the barricades marked *POLICE* or you're sure to meet Sam sooner than expected! Shunt the other vans and trucks off the road to get the lead spot, but be careful. Too many knocks get

your jalopy coughing, spluttering and grinding to a halt, straight into the hands of our Fat Sheriff!

The full version features in-game music, of the distinctly Deep South variety, plus a map option and the chance to upgrade your pick-up to turn it into a real burn-up! This version lets you play for only a while, and your chances of reaching the end of the first stage are pretty slim, but that's what demos are all about!

To load *Hillbilly Moonshine Racers*, just double-click on the

file named *MOONSHIN.TOS* and wait for the characters to introduce themselves.

Then grab your joystick – and remember these simple controls.

joystick left	turn left
joystick right	turn right
joystick down	brake
joystick up	accelerate
joystick fire	shift into high or low gear

Yeeeeee Haaarr! Happy racin' – and don't forget that boozin' and cruisin' don't mix too good! Hic!

GODS continued

monster, some evil and violent, some just evil. Almost all are deadly, unless you can protect yourself. To do this you need to make good use of the weapons you find en route. You can gather up all kinds of collectables, just by walking over them. You can find knives, fireballs and potions to ramp up your firepower, and you can buy even more from the local shopkeeper, who makes an appearance at the half-way point of the game.

As well as weapons, there's a certain number of tools too. To open doors you need a key, and to protect yourself you need yet more potions. Functional and holy items all need to be carried in your small inventory, which can hold up to three items at once.

STARTING OUT

To begin, just double-click on the file named *GODS.TOS* and the program loads. Note: because the *Gods* demo is so large, it does take up to two minutes to

load. To start with, it may look as though nothing is happening after the first disk access, but be sure to give it plenty of time before assuming it's broken! Secondly, if you back up *Gods*, you must do

so onto a ten-sectored disk, rather than a standard GEM-formatted one. If you're not sure how to do this, just run *Gods* from the original Cover Disk, but make sure it's write-protected.

The Gods controls (joystick in Port 1):

MOVEMENT

up	jump up
down	crouch
left	walk left
right	walk right
up-left	jump left
up-right	jump right
Fire	shoot weapon

LADDERS

up	climb ladder
down	descend ladder
down-left	leave ladder left
down-right	leave ladder right
up-left	jump off ladder left
up-right	jump off ladder right

FIRING ON A LADDER

First select the direction in which you wish to fire, by holding down "Fire" and pushing the stick in the chosen direction. After this, pressing "Fire" alone shoots in the selected direction. You don't need to worry about fire direction again unless you

leave the ladder or require a different angle.

JUMPING ONTO A LADDER

Jump as normal, but when passing the ladder push up or down to grab hold.

INVENTORY

reveal inventory	push joystick down, hold it there and press "Fire"
select item	Fire to highlight item you want to drop or collect
exit inventory	release joystick to stand and drop or collect item

SWITCHES, LEVERS, BUTTONS

To use switch	stand below switch, push up to face wall and press "Fire."
---------------	--

Yeeeeee-haaah! Listen up, y'all. Danged if it ain't the

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Before you call have ready the info we need to help you: the model of your machine; the version of GEM/TOS you're using; and anything you've got attached to (or plugged inside) the computer. Have the disk handy and your ST up and running, and a pen and paper handy to take any notes. But please remember: we have time to help you on Wednesday afternoons *only*.

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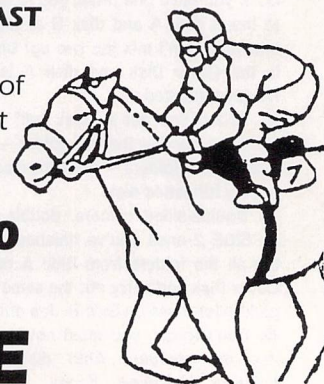
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MACHINE: ALL STs

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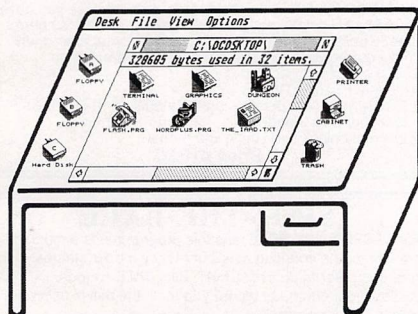
FROM: SOFTVILLE COMPUTER SUPPLIES

CONTACT: 0705 266509

GEM Desktop is fine if all you do with your ST is play games, but if you enjoy using other kinds of software and even format the odd disk, then its quirks soon become very apparent. Double Click Software have picked up on those problems and released their own improved version of Desktop, one which they claim is a major improvement on the standard Desktop.

DC Desktop comes on one disk, and it needs installing before you can use the program. You first enter your name and address, then move the actual program files to your boot disk or hard drive. This is simply a case of copying whole folders across, then placing a boot program in the AUTO folder. Once this has been done, you can reboot and your ST auto-runs the new Desktop.

The display has been redesigned to look much more attractive than the standard GEM Desktop. The icons representing the drives and the trash look three-dimensional, but operate in exactly the same way as the old ones. What's

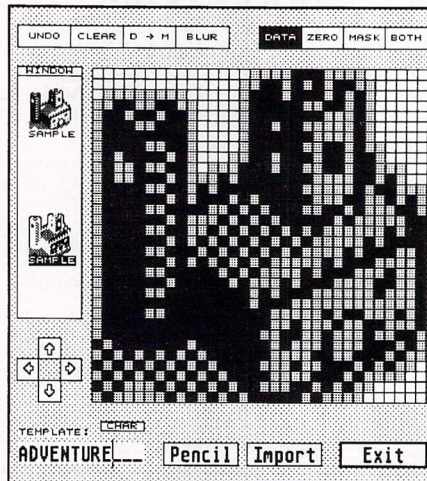


■ The attractive DC Desktop is a clear improvement over the old GEM version

more, files and folders can be given unique icons, enabling you to find the one you want extremely quickly. These icons can be installed actually on the Desktop itself, so you can run programs straight after boot-up, without having to rummage through any drives.

The icon installer is very comprehensive. Besides placing icons directly onto the Desktop, this sub-program can also be used to chain one program to another, and to load and save Desktops and cabinets (more about these shortly).

Icons themselves can be edited using the Icon Edit resource program. Existing icons can be modified and new ones can be designed or imported from other Desktop programs like Neodesk. The design screen incorporates all the standard drawing facilities, such as line,



■ Creating or modifying Desktop icons is simple, though detail is necessarily limited

circle, fill and rotate, with a blowup of the icon for ease of editing. Thus icons can be quickly designed and assigned to specific programs.

A notable addition to the usual display is a device called the Cabinet. This is a virtual disk drive which enables you to locate your most frequently used programs. You simply drag the programs onto the Cabinet icon – the programs themselves aren't actually placed in the Cabinet, merely information on where they can be found, creating an instant index system.

The Trash can has been given one particularly useful new function: data is recoverable. When you drag a file to the Trash, it is actually moved into a folder labelled Trash. Later on, programs can be recovered or properly deleted. The Trash folder can also be configured as a

RAMdisk, meaning STs without a hard drive needn't spend too much time swapping disks.

Other functions, such as "show text," are accessed from separate program modules. These are called when you invoke a show, spool, icon install or terminal. The show command has three functions: show text, show picture and show archive. The show text command is flexible, enabling you to move through text and perform searches on it. The show picture can show 17 different picture types and show archive can list programs squashed in ARC format. The spooler enables you to keep an eye on the printer, stopping file dumps and changing the order of files. A huge improvement! **stf**

FORMAT RATINGS

DC DESKTOP/£19.95/Softville Computer Supplies/0705 266509

Features	74%
Loads of great Desktop updates & improvements	
Speed	73%
Does slow down on screen updates if your ST doesn't have a blitter chip	
Ease of Use	65%
Icon installation & initial setting-up are protracted	
Results	68%
Some extremely useful features. Makes the Desktop fun again!	
FORMAT VALUE	71%
Very cheap, comprehensive & easily updated	

The Competition

Gribnif Software's Neodesk (£39.95 from Electric Distribution ☎ 0480 496666) is far better but twice the price. Gemini in the Public Domain looks as good as DC Desktop but lacks the features

DC Utilities

MACHINE: ALL STs

PRICE: £19.95

FROM: SOFTVILLE COMPUTER SUPPLIES

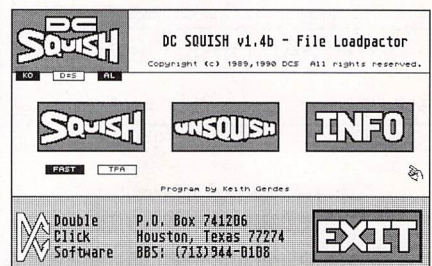
CONTACT: 0705 266509

Up to now, most decent utility software has been Public Domain. Double Click Software decided that they'd produce commercial, professional looking versions of what are usually fickle programs. The result is DC Utilities, a collection of nine programs.

The emphasis of the collection is on compaction and extraction of files – invaluable for saving memory. DC Xtract Plus combines both these elements in one program. ARC, LZH, ZOO and ZIP files can be created, tested or extracted from a main menu. DC Squish enables you to create self-running compacted files, while with DC SEA you can create self-extracting archives of numerous programs.

DC Freeze Frame is a memory-resident picture saver. You run the program to install it and then press <Alt> and HELP together to save the picture on screen to disk. Ramit is a RAMdisk which you can format to any size, just like a floppy disk. Finally, Deskey is an advanced macro utility which can run either from Desktop or within a program.

STF Rating – 85%



■ The DC Utilities all boast easy-to-use, self-explanatory menu screens like this

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Retouche

MACHINE: 1 MBYTE STs (MONO ONLY)

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FROM: COPYCARE SERVICES LTD

CONTACT: 081 679 7307

The ST has proved itself to be an ideal vehicle for DTP applications, but ancillary programs are very thin on the ground. It's all very well having a superb program such as Calamus at your disposal, but it's no use if your imported images are of a poor quality. Now there's *Retouche*, from Germany – a place where high-quality publishing related programs are consistently being developed.

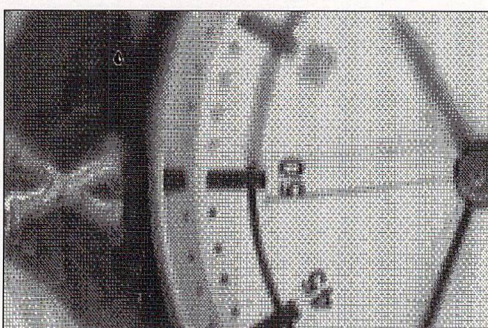
Think of *Retouche* as a digital photography darkroom and you're half way to understanding what it does. *Retouche* enables you to import a

“With Retouche, you can transform the grottiest of pictures into a shimmering high resolution work of art – all on your ST”

picture and re-touch or modify it, using some extremely sophisticated tools. Thus, with the right equipment you can transform the grottiest of pictures into a shimmering high resolution work of art – all on your ST.

By connecting a decent (preferably flatbed) scanner to your ST you can port pictures straight onto a disk and start manipulating them immediately. *Retouche* can modify any high-resolution picture you can display on your ST.

On initial load-up the main modification screen appears. This shows the file, instrument, paint mode, parameter, effects and extra menu bar functions at the top of the screen. At the bottom of the screen are the five pen settings and the grey scale bar. The file functions enable



■ Here, the top portion of this zoomed image has been “watered down.” The effect is similar to smearing a watercolour painting with water

■ Scan in the picture of your choice (what a good choice it is too) and with *Retouche* you can modify it as if your ST were a darkroom

Need something to touch up those drab high-res images? Look no

further than Retouche! Andrew Hutchinson tries out this excellent German art program

The digital darkroom



you to import or export a digitised image with *Retouche*. The most useful file format is TIFF: this is widely recognised by other computers, so you can import TIFF files onto other formats.

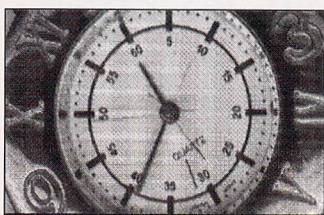
The instruments panel consists of Pencil, Charcoal, Brush, Stamp, Finger, Water, Box, Fill, Block, Zoom and Masking tools. All of these are fully configurable from the parameters menu:

■ **The Pencil** operates as a normal painting tool. Simply click on the desired shade and start drawing by holding down the left mouse button.

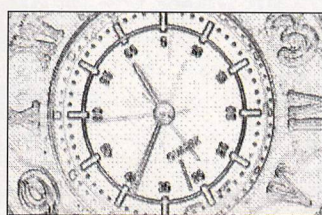
You can choose from five sizes of pencil at the bottom-left of the screen.

■ **Charcoal** operates just like a piece of real charcoal, except for dirtying your fingers. Use this tool and the greys become increasingly darker. This isn't a blanket effect though; *Retouche* recognises the different shades beneath the pointer and darkens them accordingly.

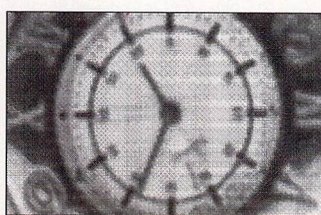
■ **Brush** operates in a similar manner to both Charcoal and Pencil except that its grey scale decreases as you move the pointer. This



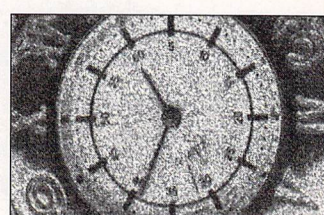
■ This is an unmodified picture of a watch, taken from a bog-standard Atari SM124 monitor



■ The “edge trace” function enables you to produce a line art version of the picture



■ Blurring the picture produces a wonderfully hazy, evocative version of the original image



■ For a newspaper-like feel to the image or an artistic mezzotint effect, try roughening it

produces an effect very much like a paint brush – the faster you move the pointer, the less defined is the line.

■ **Stamp** is a general purpose work tool which you can define. It can be configured to operate in a certain manner depending on the grey scales behind it. Once you're happy with the stamp's shape you can then paint with it and use it like the Pencil, Charcoal or Brush tools. Colour flow can also be modified.

■ **Finger** is a very powerful and useful tool. It smudges colours and shades them

■ **To do her justice you once needed a complete darkroom – now all you need is an ST!**

smoothly into one another. It intelligently recognises shade changes and smudges accordingly. You can execute smooth transitions between shades or rough cuts using the Finger.

■ **Water** works in a similar manner to the Finger. It simulates the effect of water on a water-coloured painting – making it easy to blur and create very smooth colour gradations.

■ **Box** enables you to create a colour gradated square on the screen. This can be configured to

work only on specific shades so you can quickly change small portions of the image.

■ **Fill** works along the same tonal grey scale lines as the other tools. Using this, you can fill a connected surface area with a new grey value.

■ **Block** is useful for *Retouche*'s special effects functions. You can highlight key areas of the screen and then treat them to a blur or an edge trace, for example.

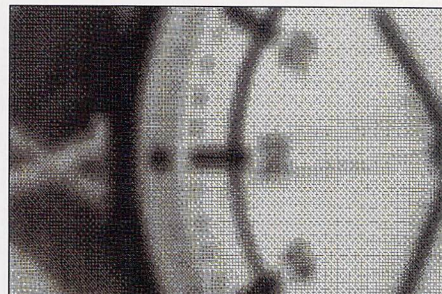
■ **Zoom** works at five magnification levels. The right mouse button zooms out of the image, the left button zooms in.

■ **Masking** enables you to create montaged images. By placing a mask behind a main image you can erase parts of the top image and have the mask show through.

Assuming you have the hardware – a TT for example – you can play with up to 256 real grey scale values. This gives tremendous flexibility and extremely attractive high-resolution images. You can set Brightness and Contrast using a curve line, and before changing these settings you can test them on your image. This curve can then be saved to disk for future use.

On all but the Magnifier and the Block tools, pressing the right mouse button enables you to erase portions of the image. Again, this is fully configurable to carry out a wide variety of effects – you can erase to show the mask behind the picture for example.

Retouche is a revolutionary piece of software. It comes with a comprehensive manual and is very easy to get to grips with. Although it's expensive, it's worth it for the incredible range of features it offers – there's just nothing currently available to touch it. **stf**



■ **Softening the image is equivalent to smearing Vaseline on the lens of a camera**

FORMAT RATINGS

Retouche – The Digital Reprostudio
£172.50/Copypare Business Services
081 679 7307

Features	91%
Packed full of features – you wonder how they do it	
Speed	89%
Some of the global effects take a while to work	
Ease of Use	92%
Very intuitive to use	
Results	94%
Enables you to create superb retouched images quickly and easily	
FORMAT VALUE	93%
Costs a few quid, but then this is a unique program	

The Competition

There is no competition, but *Retouche Professional*, coming soon, is going to be something special

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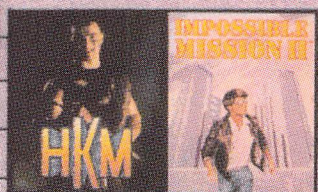
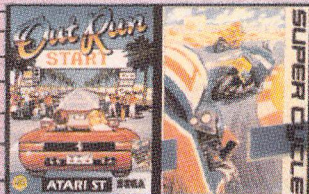
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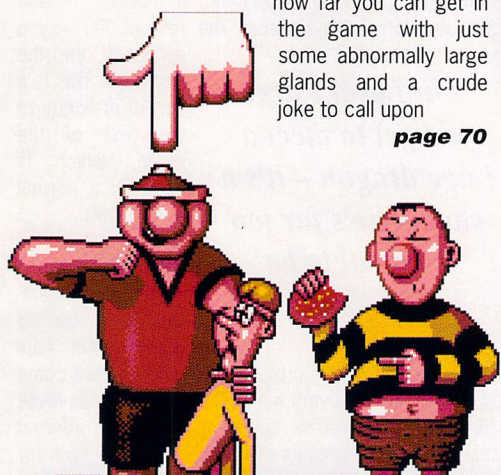
Screenplay

*Tired of TV? Bored with books? Uninterested in – um – utilities? May we interest Sir (or Madam) in our selection of main courses? We have a wide selection of humour, intrigue and sexual innuendo available. Just follow the **FORMAT** waiter, Sir...*

VIZ

You've sniggered at the comic and fnar-fnarred your way through the TV cartoon. Now see how far you can get in the game with just some abnormally large glands and a crude joke to call upon

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THE STF RATINGS SYSTEM

● It is **ST FORMAT** policy to review only finished games – that is, the games you could actually buy in the shops – never incomplete or demo versions

GRAPHICS: A score out of ten for the quality of visuals and animation, including how big and colourful the sprites are, how smooth the scrolling is, and so on.

SOUNDTRACK: (out of ten) Sampled sounds are realistic and rate highly but ST sound chip noises tend to send your eardrums convulsing

INTELLIGENCE: (out of ten) How clever do you need to be to tackle the game? Puzzle and strategy games should be tough; few shoot-'em-ups are mentally taxing

INSTANT APPEAL: (out of ten) You take the game out of the box and drop it in the drive. How well does it draw you in? How easy is it to get into?

LONG TERM INTEREST: (out of ten) You've had the game for a couple of weeks. Is it covered in dust, in the bin or still in your disk drive?

OVERALL: (a percentage) Terrific graphics and wonderful sound make a game look hot, but they don't make it great. The overall score comes after joint discussion between the **FORMAT** reviewers and depends on the quality of the gameplay and its long-term appeal



CODENAME: ICEMAN

Only clean-cut all-American heroes need apply for Sierra's newie (nuclear submarine experience and a perfectly white smile an advantage)

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BITMAP TOP TEN

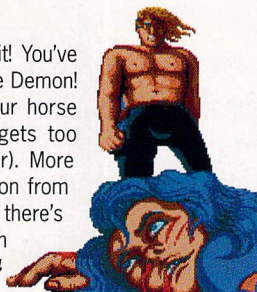
You loved their *Xenon 2* and *Cadaver* – but will you agree with the Bitmap Brothers' choice of the ten best-animated games of all time?

page 77

WRATH OF THE DEMON

Now you've done it! You've gone and upset the Demon! Quick, jump on your horse before his Wrath gets too big to handle (ozer). More superlative animation from Readysoft – and there's even a game with this one!

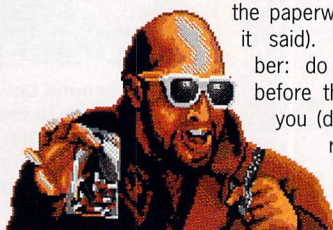
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NARC

Bust the perps (as they say), waste the wild dogs (I believe the expression is) and screw the paperwork (I think it said). But remember: do it to them before they do it to you (did I get that right?)

page 73



SCRUTINISED THIS MONTH



■ Good evening, Sir (or Madam), we're the **FORMAT** team, and we'll be your waiters tonight – along with Ed Ricketts, who's in this box the rest of us are trying to hold shut. On the **FORMAT** menu this issue are:

CODENAME ICEMAN	66
CURSE OF THE AZURE BONDS	62
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SUPER GRIDRUNNER	80
TEAM SUZUKI	59
VIZ	70
WORLD CHAMPIONSHIP SNOOKER	80
WRATH OF THE DEMON	54
XENON	81

SCREENPLAY EXTRA	80
GAMEBUSTERS	88

MIDWINTER 2 SPECIAL

Prepare for the arrival of this monster by reading all about **FORMAT**'s very own mission for the game. Take no prisoners, give no quarter and show the Admiral where to get off!

page 56



ALSO ON TEST THIS MONTH: Steve Davis World Snooker ■ Super Gridrunner ■ World Championship Snooker ■ A whole heap of over a dozen budget games! Turn to page 80



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Wrath of the Demon

Wanted: exceptionally brave person to rescue complete Kingdom from violent demon. Applicants must not have an IQ over ten. Ed Ricketts applies for the job...

DRAGONS, POTIONS AND DEATH



■ Here is the Level Three dragon, who seems almost too nice to kill – the look of horror on his face when you bash him up just melts your heart (if you're a sentimental person, that is)



■ Potions are always useful. The first renders you immortal for three seconds and is excellent for combat at close quarters. The other two reduce the monsters' energy and heal all your wounds



■ Er, unless, that is, he gets you first. With all your energy gone and Big Blue sniggering at your demise, you sink into a lifeless heap on the cold floor. Such a shame, you were doing so well...

Can you make a sentence using these three concepts: Readysoft game, fabulous graphics, non-existent gameplay? Up till now Readysoft concentrated on Sullivan Bluth cartoon-style games that amount to little more than vaguely interactive demos. They hope to change all that with the release of *Wrath of the Demon*, an original creation from three French-Canadian programmers.

Apparently a large and exceptionally nasty demon has woken up from a long sleep and he's not too happy with the current situation. Talk about getting up on the wrong side of bed – the grumpy old thing

decides to decimate the kingdom. And you'll never guess – you've got to stop him. With the incentive of the Princess's hand in marriage – and maybe even the rest of her – you gallop off onto the first level. This is a sort of prologue to the rest of the game, which is basically a normal beat-'em-up.

On your faithful nag you get to jump over obstacles and pick up potions that happen to be lying around – these come in very handy later on. On each level, you're confronted with a different species of baddie. On Level Two, for instance, you get to meet some extremely annoying goblins, while on

“On Level Three you get to meet a huge dragon – it's a shame he's far too comical to be threatening”

GOBLINS ROUND FOR TEA?



■ The Second Level enables you to meet some lovely little goblins. Charming creatures they are, if you ignore their small foibles, such as a tendency to throw rocks at your head



■ Hell hath no fury like a demon scorned. For reasons best known to himself, Mr D Mon decides to roast the kingdom. Get out there and show him what for – but first make sure you've got your clean underwear on

works well, although the detailed backdrops tend to become repetitive after a while. A different sampled tune and various spot effects accompany each level – they serve their purpose, but aren't overly exciting.

VERDICT

This is certainly an improvement on the previous Readysoft games.

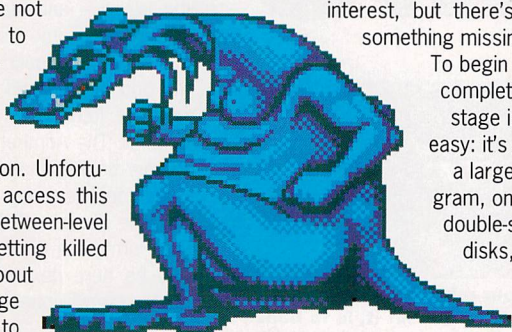
Instead of the odd push on the joystick, you actually have to use it in an intelligent way – there's far more player interaction than before. Finding potions and having to explore your way around a level certainly adds an element of interest, but there's still something missing.

To begin with, completing a stage is not easy: it's such a large program, on four double-sided disks, that data

Level Three you meet a huge dragon – it's a shame he's far too comical to be threatening though.

Unlike in many other combat games, there isn't a huge number of complicated joystick movements for you to learn. Fighting is fairly instinctive, so moving the joystick has a very predictable effect – pretty useful when you're trying to dodge three enemies at once.

Since you're not likely to want to start from the very beginning each time you play, there is a save game option. Unfortunately you can access this only in the between-level screens, so getting killed just as you're about to finish a stage means having to play that level all over again.



EFFECTS

The graphics throughout *Wrath of the Demon* are superbly animated. Before the game starts there's a fantastic opening sequence, complete with gloomy and atmospheric sam-

“Pleasurable frustration can easily turn into angry boredom with Wrath of the Demon”

ples – it's so well drawn and animated you feel as if you're watching a cartoon. In the game itself, the sprites are large and colourful, and they move extremely smoothly.

Every creature has a different method of attack and they're pretty difficult to kill as well. Scrolling is smooth in all cases and the parallax

is annoyingly loaded from disk each time you restart a game. These delays are very frustrating. Couple this with the restricted game save facilities and the edge is taken off the just-one-more-go factor. Pleasurable frustration can easily turn into angry boredom.

Wrath of the Demon is a step closer to marrying fantastic graphics with a worthwhile game, but it doesn't quite make it. If there had been more variation in the gameplay department, a break from the bashing perhaps, then this could have been *FORMAT* Gold material. As it is, it's good, but not that good.

ED RICKETTS

GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	5
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	81%

MEET THE NEIGHBOURS

Apparently there are 120 different monsters in *Wrath of the Demon*, and every single one of them is out to get you. Not that you get a chance to count them – you're too busy trying to rearrange their internal organs for that. Maybe violence isn't the answer – perhaps they just need some love and understanding. On the other hand, smashing them repeatedly in the face seems to work too.



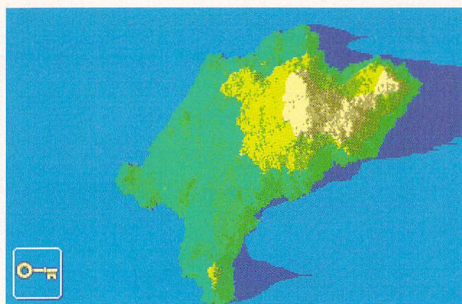
■ Level Four is the first to offer some flexibility in movement. Parallax horizontal scrolling means you can choose whether to go left or right. Either way you get to meet uglies like this guy



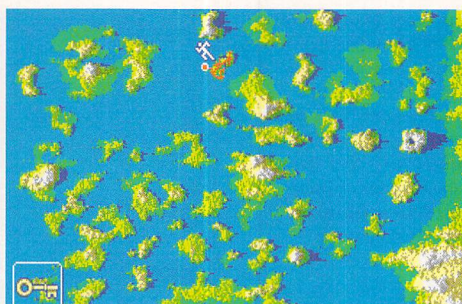
■ Travel to the left as far as you can go and you eventually come across Mr Happy. Although he looks evil, he wouldn't hurt a fly – just take the key he guards and head back the way you came



■ Not all of the monsters are mobile. These tentacles rise up from the ground in regular patterns – so if you want to avoid injury, you must make sure that you time your jumps well



■ This is Hemet, and you have **ST FORMAT** to thank for the difficulties you encounter on this innocent-looking island. Just keep trying – it can be done! (Cue ghoulish laughter...)



■ The complete play area. When you tackle **Flames of Freedom**, you have to sample the delights of Hemet at some point, so why not try it first? Go ahead, make our day!



■ Fly inland from the idyllic east coast of Hemet, playground of the rich and infamous, and apart from the odd palm tree you find some irate troops just itching for a scrap

Flames of Freedom, follow-up to the compulsive MidWinter, is coming! Now the bad news: Microprose let the **FORMAT team play around with it first. The result: an exclusive **ST FORMAT** mission! Andy Hutchinson has the inside story**

Mission impossible

The boys at programming team Maelstrom are on the brink of completing their biggest project yet. Over a year in development, and spanning three disks, *Flames of Freedom* is a seriously gigantic game. Marrying 3D arcade elements with a strong strategy backbone, the game is a clever variation on the standard wargame. The aim is to solve a set of 41 missions which see you attempting to subjugate an entire colony of islands.

But one island is going to be very different indeed because we designed it! Now the once pleasant island of Hemet has some military buildings, enemy units, friendly resistance and some nasty surprises...

Our first job was work out what we wanted the overall objective to

be. Being vindictive chaps, we decided to make life hard for you. Your mission, should you decide to accept it, is to assassinate an enemy leader who goes by the name of the Admiral – but don't think it's going to be easy. There's a large elite troop of Presidential guards on Hemet and these guys don't go a bundle on trespassers. They're kitted out with state-of-the-art equipment and a serious attitude problem.

Next, we compiled profiles of the 12 people who are going to populate our island. These had to be worked out in great detail, so when you encounter the island inhabitants they react in a certain manner.

Then we constructed the island's infrastructure. This was simply a case of drawing the roads and rail-



■ "Your mission, Jim, should you decide to accept it, is to beat the **ST FORMAT** stronghold of Hemet – and ignore the dolphins"

ways with a map editor. You can put settlements on the map too. You simply locate and name your new settlement using the map editor.

This is where the fun starts – you can begin depositing weaponry, transport, enemy units and buildings on Hemet. Buildings are crucial to the build-up of the mission so we dealt with these first. We decided that the police would have an important role in events, so they needed an HQ. Other buildings include a couple of airbases and a telephone exchange. Work out the strategic importance of these buildings for yourself.

The opposition might be tough, but all the weaponry you need is scattered around the island. We haven't made things easy, but if you look carefully you can find limpet mines for the subs and rocket launchers for aeroplanes – just watch your back.

We've also supplied plenty in the way of transport. Of course, you can



■ The Maelstrom team, who are hard at work on *MidWinter 2* – with a little help from **FORMAT**

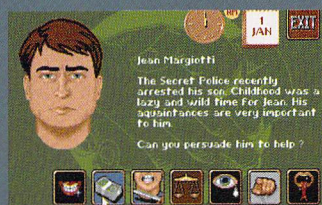
take over enemy vehicles by jumping in when the action icon appears at the top left of the screen, but there are also plenty of goodies ready and waiting in inaccessible places around Hemet – just remember to explore the island thoroughly.

Enemy units are crawling all over the island – and we mean all over! There are some crack submarine packs hiding around the coast, and the odd biplane and zeppelin squadron just itching for a bit of aerial combat. The Admiral has the kind of military backup that'd make even the Queen feel jealous, so you'd better be sure of yourself before chancing your arm with him. Think it over... and be here next issue for the full game review! Honest. Trust us... **stf**

FRIEND OR FOE? YOU CAN'T BE SURE

When you meet people, you can try to convince them to help you. To do this you can use several skills: charm, sex-appeal, authority, reasoning, bribery, pleading or deception.

Whether they help or not depends greatly on the strength of these factors – if you're ugly, don't expect to win someone over with sex appeal. You must also consider the makeup of the ST-controlled characters. Each can react in four different ways to your advances – not all very helpful.



■ You need all the help you can get in this mission – but do you have the necessary skills to persuade this chap to aid you?

TEN TIPS FOR SUCCESS ON HEMET

- 1 You can take nothing easily. All the goodies are heavily protected.
- 2 A walk in the mountains could be a rewarding experience.
- 3 Don't overlook the railway as a quick mode of transport.
- 4 The Admiral definitely isn't going to do you any favours.
- 5 If the submarines are getting the better of you, change to a smaller, more manoeuvrable mode of aquatic transport.
- 6 In the south of the island, supremacy in the air is all a question of infiltration.
- 7 Don't be afraid to venture a bit out to sea in search of the ultimate attack vehicle.
- 8 Don't ignore buildings just because they look harmless.
- 9 There's a chemist on the island who knows a thing or two about the enemy.
- 10 For the perfect lemon sorbet, use only the freshest lemons.

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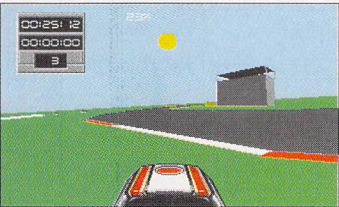
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Team Suzuki

There are so many racing games out at the moment that if you laid them all out in a row, they'd reach the finish line without moving. For any racing game to stand a chance in today's market it must be pretty damn good. Gremlin reckon that *Team Suzuki* is "probably the smoothest scrolling polygon racing game ever." An oft-heard claim for sure. But is it true?

Three different bikes and 16 different tracks from around the world provide plenty of scope for

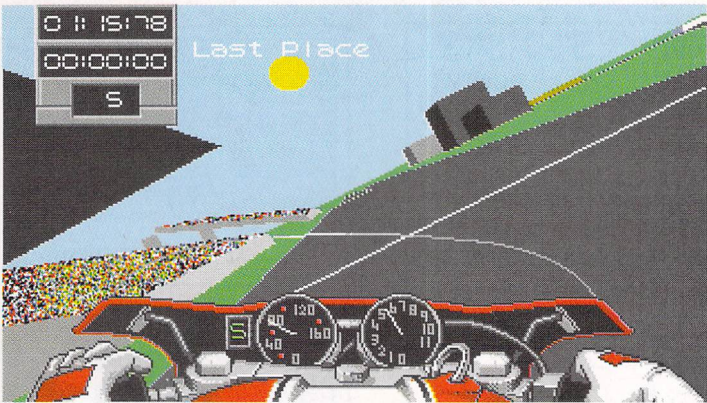


■ You get the option of an over-the-shoulder view – for those I-didn't-see-it-coming crashes

experimentation. It's best to start with the smallest bike, the 125cc. This is an automatic, so you don't have to worry about changing gears. The larger bikes have six gears and are far more powerful.

Control is via mouse or joystick, with the former being more responsive and intuitive, although it's a bit awkward trying to change gear on the keyboard and scream around a hairpin bend at the same time. Fortunately, you can hone your skills on the practice track without any other riders around to complicate things.

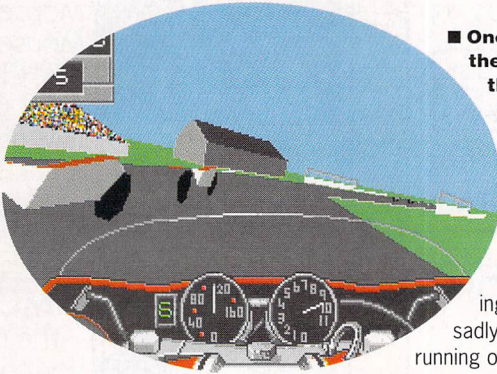
When you're ready, you can take on the real thing against seven other pros, either in a single race or a full season. Go off-track during a heat and you hear a jarring noise



■ Ah, bliss! A bike, a circuit, and seven other homicidal racers determined to make you into road paste. Screaming round corners in sixth gear on a 250cc bike isn't recommended, though – unless you're an adept pupil of Barry "Squashy Legs" Sheen, that is

where your bike is being damaged. Your position is displayed at the end of each lap or when you pass another rider.

same story for the competitors. Their bikes look more like the Light Cycles from *TRON*. There's a nice hefty motorbikin' sample over the



■ One useful option is the ability to turn off the other riders' sprites and the dashboard – doing this provides a much faster and smoother display

title screens, but during the game the bike sadly sounds like a 2CV running on a nine volt battery.

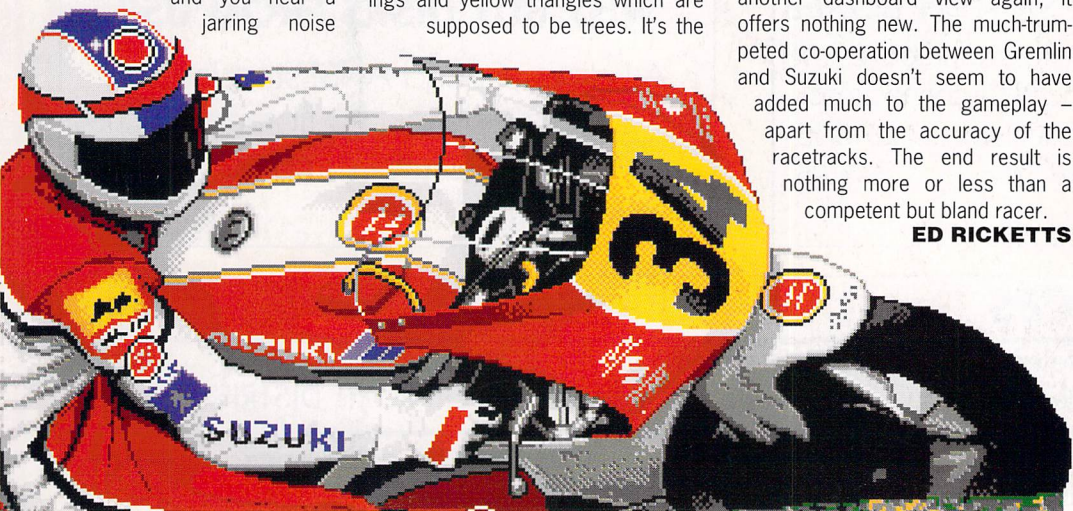
EFFECTS

For once a software company tells the truth – the scrolling really is smooth. But this is partly because the trackside graphics are so simple – large square grey blocks for buildings and yellow triangles which are supposed to be trees. It's the

VERDICT

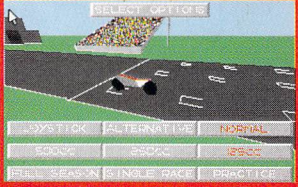
If you're one of those people who just can't do without every single racing game in the entire universe, you'll like *Team Suzuki*. If, on the other hand, you never want to see another dashboard view again, it offers nothing new. The much-trumpeted co-operation between Gremlin and Suzuki doesn't seem to have added much to the gameplay – apart from the accuracy of the racetracks. The end result is nothing more or less than a competent but bland racer.

ED RICKETTS



THE RACE TO VICTORY – OR THE HOSPITAL

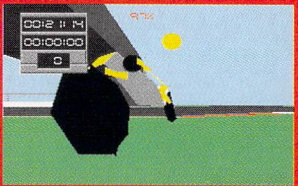
As well as the pre-game options there are several changeable mid-race factors. In the practice mode, for example, you can alter the viewpoint to almost anywhere. This creates some really stunning "camera" shots of the race. Mind you, while you're fiddling with the visuals, your vitals are being scattered all over the place...



■ As you're poised on the starting line with just some paltry options in your way, adrenaline starts to pump...



■ Unfortunately, some stupid prat put bends in the track. They didn't warn you about this at the Clapham Motorcycle Training School



■ When you mess it up, be prepared for even more embarrassment as you're forced to watch the replay showing just how badly you cocked up. Pity there's no replay of the six hour long operation that follows...

GRAPHICS	7
SOUNDTRACK	4
INTELLIGENCE	4
INSTANT APPEAL	8
LONG TERM INTEREST	5
OVERALL	69%

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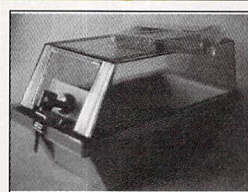
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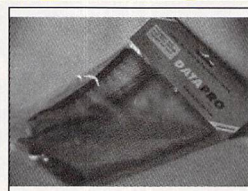
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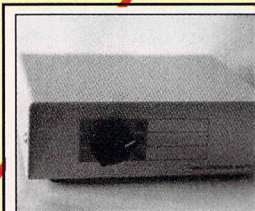


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There's more to the art of burglary, you know, than simply brandishing a sawn-off shot gun or rummaging through someone's drawers. The big money is in the banks, and in *Revelation* you're heading for the vaults to seek your fortune.

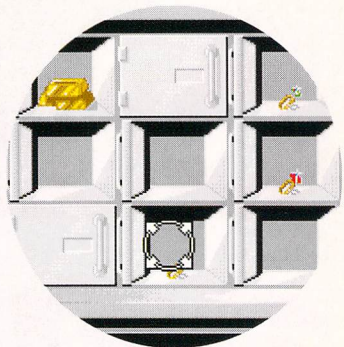
Things have changed though. Safe-cracking isn't a case of lighting the fuse and taking cover any more. It's far more sophisticated than that, and requires a good deal of logic and cunning. In this game you're dealing with combination safes and you have to crack the codes to get to the cash.

Each of the 80 or so screens shows an arrangement of locks, tumblers and dials, all of which have colour coded segments. To crack the safe, you must match all the locks to the same colour tumbler.

You cannot turn the tumblers directly, so it requires a bit of lateral



■ To give you a helping hand there are several icons which appear sporadically throughout this fiddly puzzle game. The hand symbol freezes the game until the next time you "grab," while the numbered icons give you the corresponding number of extra seconds. The arrow symbols reset all wheels to their starting positions - use this only if you make a right pig's ear of the whole thing!



■ Once you complete a level, you have the opportunity to raid the safe. Inside are nine deposit boxes. Some contain goodies, others don't. The more quickly you solve the puzzle, the more time you have to open the boxes

Revelation!

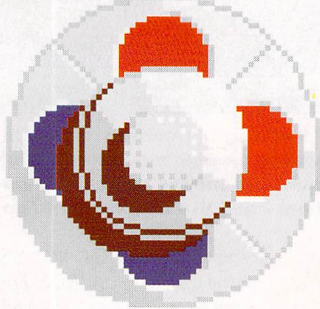
KRISALIS £19.99

thinking to get the safe open. When you get two adjacent wheels the same colour, for example, the neighbouring wheel spins in a clockwise direction. You must turn the dials so as to trigger such a chain reaction and line up the locks. Unfortunately, the dials can be turned only in 90 degree increments and often you get one

lock open only to find that another has closed again.

EFFECTS

The backgrounds do change often enough, but are frequently repeated and irrelevant to the gameplay. The



dials themselves are scaled up or down in size depending on how many are on-screen, but even when they shrink to the tiniest size it's still easy to make out their colours - just as well, since that's the whole point.

VERDICT

Revelation is just too darn difficult! You often have more success by turning the dials in a random blind

panic than by studying the situation carefully. Various icons try to compensate for this - especially the ones that freeze the game until your next action. But that's half the problem. You can pause indefinitely to work out exactly what you need to do before continuing - but with no incentive to go on, quite likely not bother.

Revelation doesn't keep you up until four in the morning. It just hasn't got the addictiveness of other puzzle games. After the first few irritating plays, you simply don't have the patience to try and crack the thing.

ADAM WARING

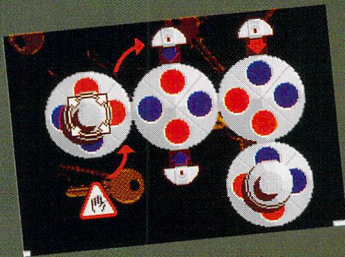
■ Here you've managed to get the top lock open, but the bottom one remains shut. It's all too easy to upset what you've already solved. How frustrating!



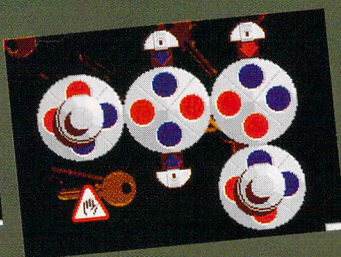
GRAPHICS	7
SOUNDTRACK	7
INTELLIGENCE	8
INSTANT APPEAL	6
LONG TERM INTEREST	5
OVERALL	64%

A LITTLE LESSON IN SAFE-CRACKING, MY SON

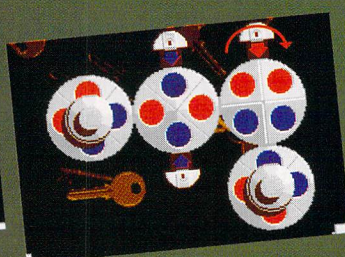
The first level is easy and designed to lead you gently into the game. One turn completes the whole puzzle... What a revelation *that* is!



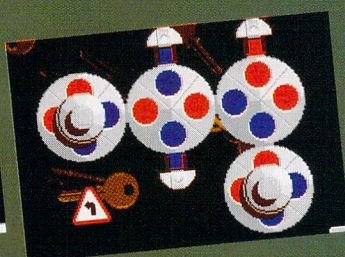
■ Turning the left wheel anti-clockwise lines up the blues...



Which matches up the blue locks, and connects the reds...



This in turn causes the second wheel to spin 180 degrees...



There! Everything's lined up and you've solved the first level

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Curse of the azure bonds

ADVENTURE IN THE CITY

Once you've got your party together you can start exploring the vast city of Tilverton and find out more about the evil curse.



■ Camp in a safe place, learn spells and do a bit of first aid



■ Hey! Where the hell did that big dragon come from?



■ After combat and another dragon has bitten the dust!



■ Eek! You've got to defeat this evil monster to succeed



■ I can't decide what colour to go for - how about blue?



■ These aren't normal tattoos in *Curse of the Azure Bonds*, a role-playing graphic adventure - you've got no idea where they come from, and they're making you do funny things. You must get rid of them - and the only way is to go on a quest to find the evil alliance...

Some years ago the first SSI game based on AD&D's *Forgotten Realms* was released. Despite becoming a bestseller on other formats, *Pool of Radiance* never made it onto the ST - but now its successor has, and very welcome it is too.

The plot finds you waking in the city of Tilverton to discover that everyone in your party has an armful of blue tattoos. You rapidly learn that when the symbols glow you are forced to follow their commands despite your better judgement - I mean, who in their right minds would attack the royal coach in full view of the city guards? Your task is to find the members of the alliance who created these bonds and free yourself from the curse.

Getting going involves generating a party, loading the preset example or transferring old characters from *Hillsfar* (a previous SSI game). Races range from dwarfs to humans, and classes include cleric, paladin, magic user and several others. It takes a while to assemble and equip characters, which can be a little tedious, but each character's appear-

ance can be modified, as can his stats (but that's cheating, isn't it?).

Then you are off, exploring Tilverton and the delights it holds. Visiting the armoury is a must, and popping into the local tavern can be



■ In the thick of battle Cynthia casts a magic missile

rewarding too. Try punching the bar-keeper's nose - but make sure you're well equipped first.

While moving around the city you see your surroundings in standard 3D representation and when battle is joined this changes to overhead 3D with movement in eight directions. Battles can be left to your ST to resolve, but you still have to sit through a blow-by-blow account

which can take ages to finish even with the speed-up option.

After battle it's time to camp, learn spells, heal your party and perhaps change weapons or marching order. An enormous number of spells is available, depending on your character level, but you need to use them carefully or you're likely to envelop your allies in noxious gas or worse.

EFFECTS

The graphics are hackneyed, varying from pretty to merely practical, and the animation is basic at best. Overall, this looks like an 8-bit game - it's just not in the *Dungeon Master* class. Still, you don't need much in a game of this type, and everything at least helps maintain the atmosphere. The sound is sparse - mainly "ping-pow" type spot effects - but it's effective enough, and there is an attractive loading tune and little sirens that sound when battle is joined.

VERDICT

It's a pity that *Pool of Radiance* isn't available on the ST, because the fifth level characters you start with in *Curse* are a little complex for the newcomer to this RPG system. *Hillsfar* players might do better, but may miss the arcade action of that game - you don't need reflexes here.

Still, *Curse of the Azure Bonds* is guaranteed to keep you going for ages. Although the graphics and sound don't use anything near the ST's potential, once you get going you don't even notice them. If you like role-playing and want a game with tremendous long term interest and a really good storyline, you can't go wrong with this one.

PAT STANDISH

GRAPHICS	5
SOUNDTRACK	5
INTELLIGENCE	8
INSTANT APPEAL	6
LONG TERM INTEREST	9
OVERALL	74%

DOUBLE DARE YOU.

Blue Max

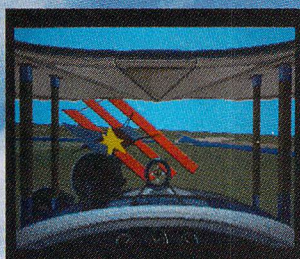
ACES OF THE GREAT WAR

WWI Air Combat Simulation

Take control of one of eight classic WWI fighters and find out how good you really are. Fly with the best—Richthofen, Fonck, Mannock, Rickenbacher—and learn their tricks and techniques.

- Action dogfight, solo, and team missions for one or two players using a single computer with any combination of keyboard, joystick, or mouse.
- Strategy Dogfight: For the skilled purist, Blue Max acts like a highly-intelligent strategic board game, allowing you and your opponent to work out detailed battle sequences and play back the moves in "realtime" 3D.
- 8 airplanes to choose from, each with its own highly-detailed flying characteristics.
- Perform missions with, as, or against the Aces of the Great War.
- Dozens of historical missions around 4 different locations within France.

How strong are your nerves at 2,000 feet, with an armed Fokker DR.I on your tail? Forget glory, friend. Think survival.



VGA color
air combat
sequence

Strategy mode
split-screen with
3D Hexboard



• VGA 256
3D COLOR GRAPHICS,
• ORIGINAL MUSIC,
SOUND EFFECTS FOR GAME
BLASTER, ADLIB
SYNTHESIZER
CARDS

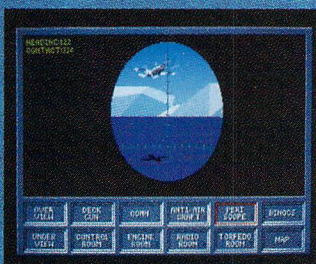
DAS BOOT

GERMAN U-BOAT SIMULATION

Winter, 1941. The icy waters of the North Atlantic. The deeper you dive, the greater the pressure. Depth charges explode around you, banging on the hull of your U-boat like iron fists. Nerve and cunning make you the terror of the Allied convoys.

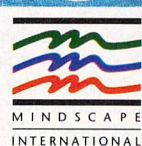
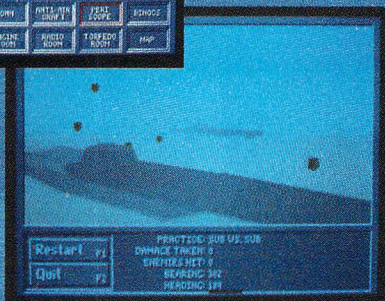
- 3D submarine warfare: For the first time, a sub warfare game lets you deal with threats below and above the surface in a true three dimensional environment.
- Real communications: Use the German Enigma coding machine to send and receive information.
- Many missions to choose from—into the North Atlantic and Arctic, inland along the coast of Norway, into the Bay of Biscay, and through the Straits of Gibraltar.
- 3 different levels of difficulty, from beginner to realistic.
- 3D graphics in 256 VGA colors, with multiple internal and external camera views in a complete 3D world.

Do you think well under pressure? How about 300 pounds per square inch of pressure? Take a deep breath, captain....



VGA periscope
view of enemy
aircraft

VGA 256 color
mine field
under North
Atlantic.



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Super Monaco GP

US GOLD £TBA

Just when you thought the last racing game had shuddered, heaved a small sigh and simply ground to a halt, up pops another and begs you to drive it until you go mad. The still remarkably sane Ed Ricketts clambers reluctantly into the driving seat, wearing his driving gloves, a pair of thick driving goggles and a sickly grin

Sometimes a title appears which changes the face of computer gaming forever. A game with style, originality, incredible graphics and unbelievable addictiveness. *Super Monaco GP* is not one of these games. Fortunately it doesn't even pretend to be – it's a racing game.

You can choose from three types of vehicle: a bog-standard automatic which is about as useful as a loofah in the Sahara desert, or two manual shift cars, one with four gears and the other with seven. Obviously, if you can handle the seven gear car, it's your best bet. Joystick control is possible but only recommended for masochists.

There are four tracks from around the world on which to compete, but you have to win on each one before you can compete on the next. Before you can race at all, you need to qualify within the top 15 on an empty track – fail at this stage and the game ends before it's even begun. Qualify and you're through to the main event.

To win on the first three tracks – France, Brazil and Spain – you have to complete three laps and be one of the first few cars to pass the check-



■ Once again, it's time to pretend you're Ayrton Senna or Nigel Mansell... Yes, it's yet another racing sim. Four different tracks to choose from and (slightly) variable weather conditions should mean you'll be playing this one for some time to come – shouldn't it?

“The track scrolls smoothly, the roadside sprites are very detailed and the other cars look great”

ered flag. It's not easy. Driving into the side barriers doesn't cause an immediate crash, but make sure you get back onto the track as quickly as possible or you can say goodbye to your wheels, chassis and probably your legs. Other drivers regularly butt you up the backside without a scratch – but try the same yourself

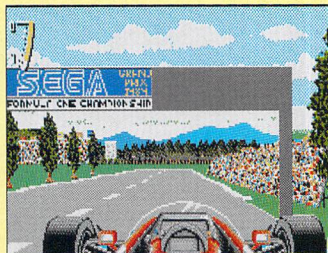


■ At least when you fail you're told in a way that's as pleasant as possible. Surely she could have found something better to wear than half a suit of armour though...

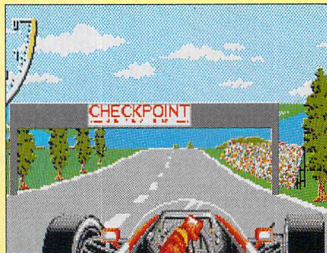
ON THE ROAD TO MONACO... OR BUST



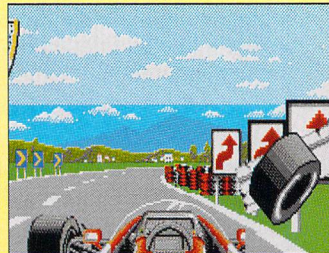
■ Before you risk life and limb on the race track, at least take the time to have a quick glance at the route you're supposed to take (or miss it completely, as the case may be)



■ Poised and confident, you're on the starting line, all souped up and ready to go. Check your hair in the mirror, make sure you've got some mints and get yourself in gear for the race



■ At various points along the way you encounter these checkpoints. They don't seem to serve any purpose, except to distract your attention at the most inopportune moments...



■ This invariably leads to your demise – no blood and gore, just minor inconveniences like lack of wheels. Why don't any of the other drivers ever crash? (Grumble, mutter, complain...)

KEEP YOUR EYE ON THE ROAD – AND THE DISPLAY

When you reach the race proper, there are many more indicators to keep an eye on than there were in the heats. Don't concentrate on them too much, though – it's the driving you're here for!

■ Country in which you're racing

■ The absolute minimum position to which you can drop – fall below this and the game ends

■ Your current driving position

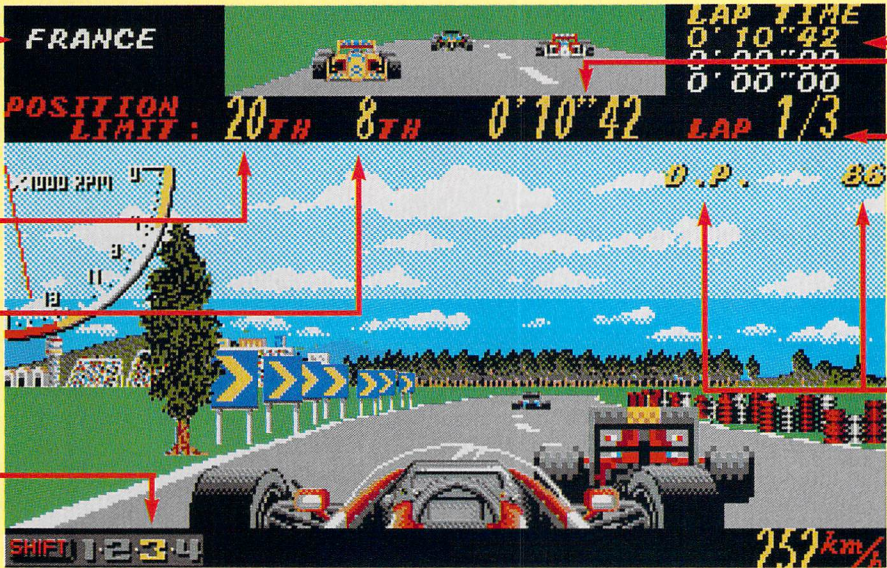
■ Gear you're in – there are four possible gears on this car, seven on the high-powered model, none at all on an automatic

■ Recorded times for each lap

■ Current lap time

■ Current lap out of three

■ Driving Points – these increase as you go on. Get enough and your name is entered into the table of best drivers



■ On the first three circuits you encounter, there's a certain chance of the track being wet. Fortunately, the probability of this decreases as you gradually progress through the game

and you soon know the meaning of pain. When – and if – you eventually make it through all the heats, you get the chance to race at Monaco itself, first in dry conditions where you must finish in the top three to qualify, then in the wet, where you must simply try to finish!

EFFECTS

SMGP (as it's known to its friends) is a very professional

program. The track scrolls smoothly, the roadside sprites are detailed enough and the other cars look great. The only problem in the graphical department is the way the sprites lose resolution as they approach you – trees become a mass of green blocks, for example. This technique is necessary to keep the speed of the game constant, but it does mean you lose out on some of the realism.

The screen is very colourful too because the programmers manage to display more than 16 shades on

screen at once – though unfortunately they don't show up on our screenshots. Visually, then, there's really nothing much to complain about.

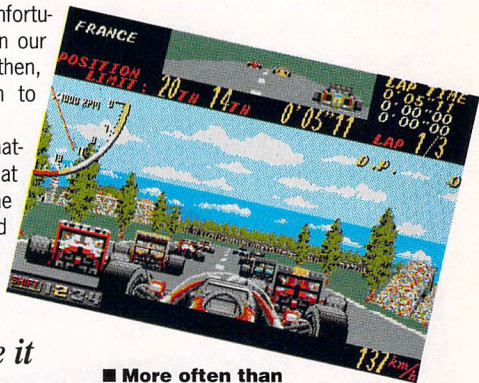
Sound is a different matter. There are no samples at all, just a standard intro tune and run-of-the-mill squeal-skid noises during the game. A

"If you eventually make it through all the heats, you get the chance to race at Monaco itself"

beefy scream of agony as you're engulfed in a twisted mass of tortured metal would have livened things up a bit.

VERDICT

There isn't anything new to say about Super Monaco GP – although

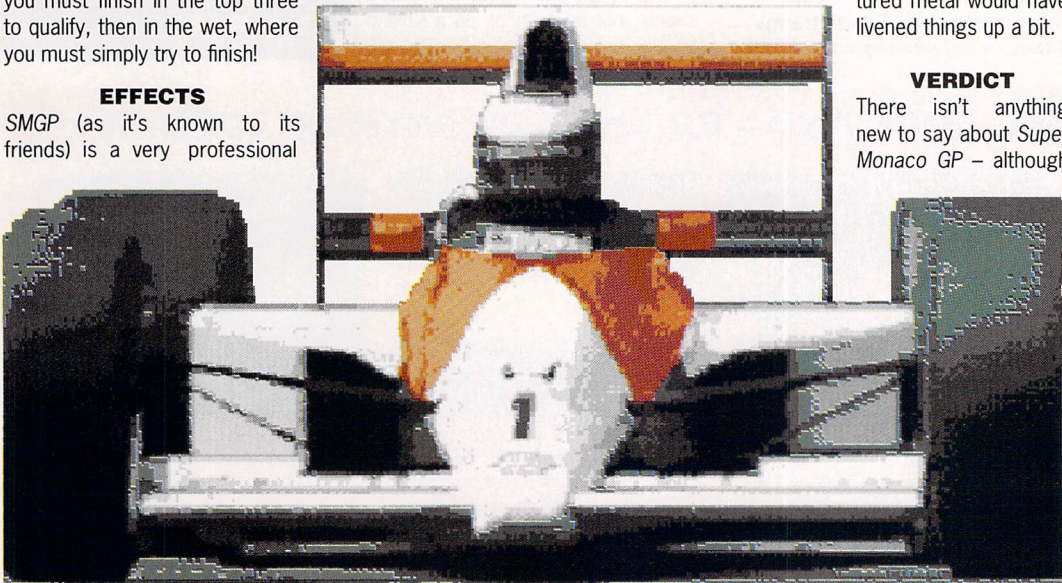


■ More often than not, racing in France means you get to skid around the track more than a bar of soap that's been dipped in gelatine and then thrown onto a large frozen pond – which is quite a bit, really...

the unnecessarily abbreviated title might tempt you to make some off-hand reference to extremely wealthy doctors who practise on the Riviera. The game is competently put together, but it's still just another racing simulation. However, it is disheartening to find that a company as capable as US Gold can still release such an average title. It may be a cliché, but the best advice is this: buy Super Monaco GP if you're into racing games in a big way, otherwise you may be disappointed.

ED RICKETTS

GRAPHICS	7
SOUNDTRACK	5
INTELLIGENCE	3
INSTANT APPEAL	8
LONG TERM INTEREST	6
OVERALL	71%



Codename: Iceman

SIERRA
£34.99



You can instantly recognise a game by Sierra On-Line.

Over the years they have developed a 3D adventure environment and used it in virtually all of their games. The system has heaps going for it but there are inevitably drawbacks in sticking to a certain style. *Codename: Iceman* is by the same designer who worked on the *Police Quest* series, so you can expect the same kind of intrigue and subterfuge as you play.

It's the year 2000 and global oil shortages and Cold War conflicts are the order of the day. You are Lieutenant Commander Johnny B. Westland, and at the beginning of the

game you haven't a clue as to what you're supposed to be doing. Luckily, the manual includes a walkthrough of the first stages – which feature, among other things, a fascinating lesson on Cardiopulmonary Resuscitation and how to get a girl drunk.

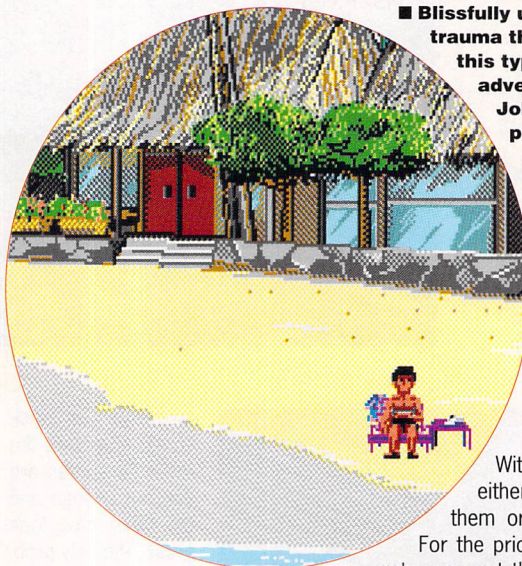
After that, you're left to wander around and try to find out what to do next. Further on in the game you come across the USS Blackhawk, a nuclear submarine, which plays a vital role in your (eventual) quest to rescue a US ambassador from crazed terrorists. It's a man's life when you're in the Navy.

EFFECTS

Sierra's 3D animated adventure environment always sounds



■ "The name's Man – Iceman." In this game you're not always lazing about looking like a geek. You often find strange women falling for you instantly – and they're not exactly coy...



■ Blissfully unaware of the trauma that awaits him in this typical Sierra 3D adventure game, Johnny Westland poses rather unconvincingly on the seafront at Skegness. The sun! The sea! The sand! That shirt!

game can use these instead – a nice touch.

VERDICT

With Sierra games, you either absolutely adore them or couldn't care less.

For the price – not exactly budget – you get the typically American touches: a huge game, MIDI support and mounds of documentation. But you must balance this against the excruciatingly slow game-play and the constant disk accessing. If you can put up with that, you're onto a winner with *Iceman*. Otherwise, it could drive you barmy.

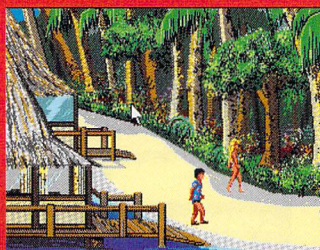
ED RICKETTS

like a fabulous idea, and indeed it would be if it weren't for one thing – speed. Simply walking across a screen seems to take an eternity, and to top it all, moving to another screen for the first time requires disk accessing – and that takes ages. If you have more than one moving object on screen at once, then everything slows down even more. Despite these faults, however, the backgrounds are well drawn and some of the animation is nicely done – particularly when you're drowning...

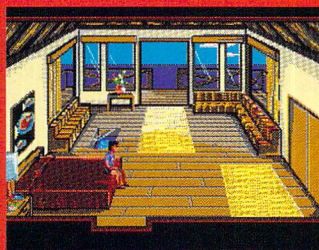
There are a fair number of internally-generated tunes and sound effects, but if you hook up a Roland or Casio synth to your ST, the

GRAPHICS	7
SOUNDTRACK	6
INTELLIGENCE	8
INSTANT APPEAL	5
LONG TERM INTEREST	7
OVERALL	77%

PLENTY OF SEA, SURF AND – ER, SUICIDE WITH AN ICEMAN



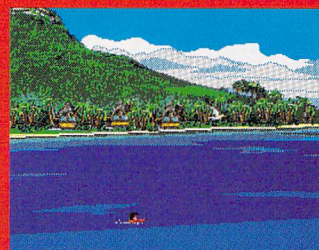
■ Butlins cater for you very well. They've erected some authentic Hawaiian-style huts and provided some authentic bimbo-style women to wander around muttering, "Aloha!"



■ When all this military work gets too much, relax in the pleasant surroundings of your bedroom – just because you're a crack agent doesn't mean you have to miss your sleep



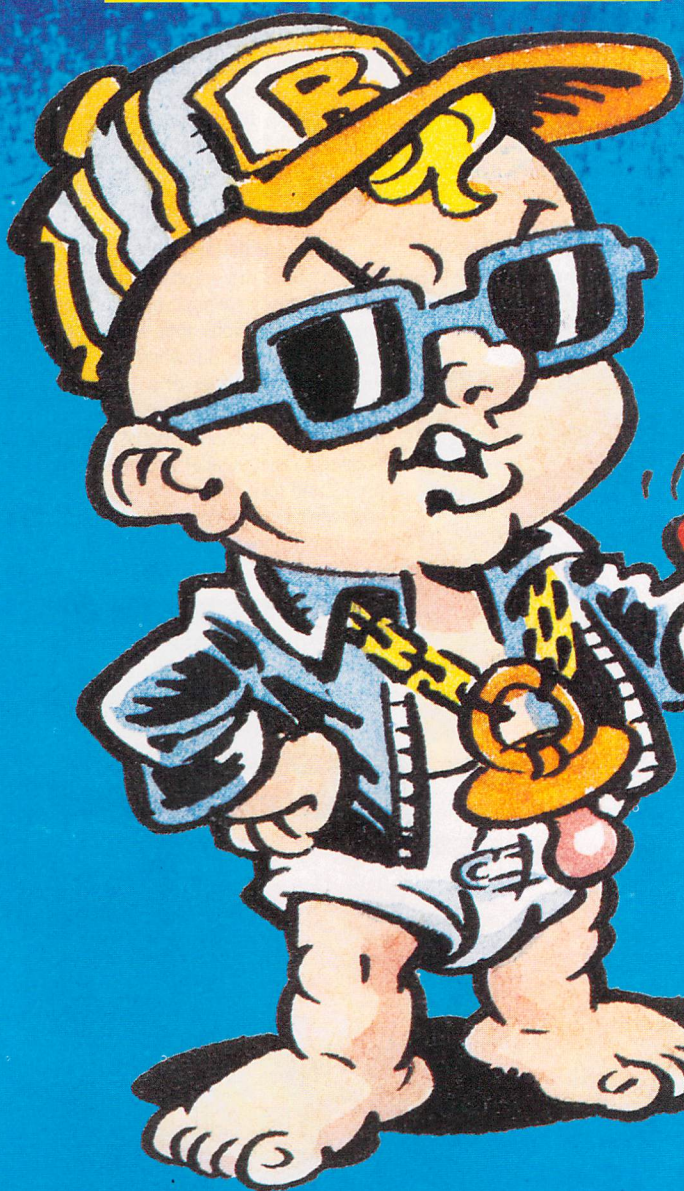
■ Suicide rates are high in this part of the world. You come across plenty of dead bodies littering the beach and now you've decided to end it all too! Hey, life's not that bad...



■ This is it! The end! Try to tread water too long and you end up not so much a crack agent as a dead one. That other fellow – the British one – never had problems like this!

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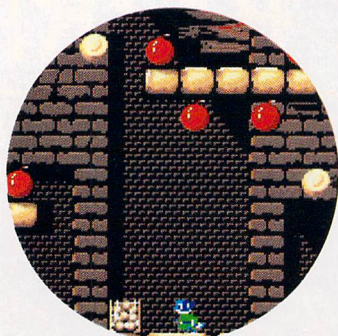


ELITE £19.99

Mighty Bombjack

With a leap and a bound, Bombjack, the renowned arcade hero of 1986, arrives on the ST – at last. *Mighty Bombjack* is the follow-up to that classic 8-bit hit which never succeeded in making it onto the ST. The original *Bombjack* was a straightforward but maddeningly addictive cutesy platform game, and guess what – this one's no different.

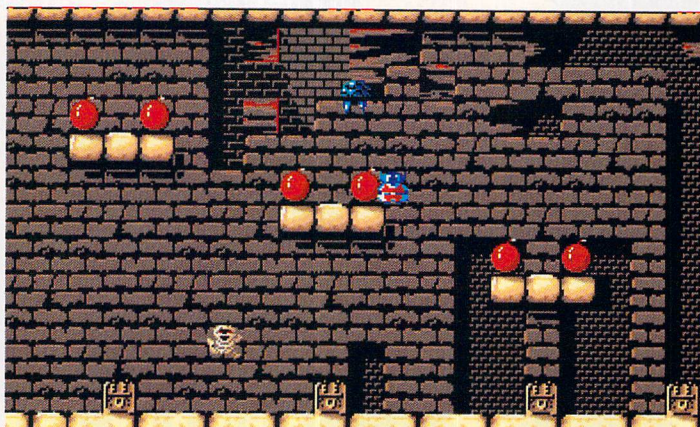
The plot, as always with a game of this type, can be completely



■ **Collect three Mighty Coins and they turn you a sickly shade of green – quite right too for being so greedy – but to compensate, the nasties turn into collectable coins. Obvious, really...**

ignored – some nonsense about an evil demon stealing the ever-so-nice King Pamera. Your task, as *Mighty Bombjack* (MBJ to his friends), is to rescue him. And how? By collecting bombs, of course – what else?

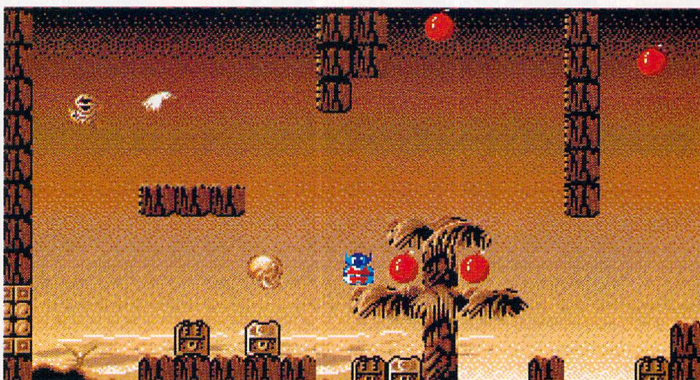
Each of the 16 levels you have to make your way through is composed of several scrolling screens



■ **The new, improved, ever-so-bouncy Bombjack is now on an ST near you. Collect the bombs, open the chests, dodge the nasties, find the bonuses, clean your teeth and be back home before 12**

that form a backdrop to the action. These screens are full of strategically placed ledges designed to thwart your every sproing as you rush about, collecting the bombs just

lying there waiting to be – er, collected. In some of the screens, you have to collect all the bombs just to get out. Hassling you along the way are various nasties – mummies,



■ **The baddies have names like C Gee and the Heel. They begin by innocently wandering about on the floor, then gradually start to mutate and whizz about everywhere, causing a great deal of havoc**

birds and skulls among them – intent on settling your hash.

EFFECTS

The whole game has a distinctly 8-bit feel to it. Little MBJ wobbles around the screen as if he's just woken up, and everything moves so slowly it's impossible to become really excited with the game. In fact, the Spectrum version of *Bombjack* seemed faster than this one. The backdrops are pleasing enough but somewhat blocky and hardly stunning. Audio effects comprise the obligatory annoying sound chip tune, which does nothing to enhance the gameplay, and the odd bloop. It all gives the impression of an extremely average game.

VERDICT

Don't bother. The original arcade and micro games were unassuming, enjoyable diversions that were good for a quick fiddle. But when you have the speed and power of a 16-bit ST, why rehash the same game? It hasn't even got the excuse of being budget software. The manual promises surprises and four different endings, but you won't even want to see the first. We deserve much better than this.

ED RICKETTS

GRAPHICS	5
SOUNDTRACK	4
INTELLIGENCE	2
INSTANT APPEAL	8
LONG TERM INTEREST	4
OVERALL	48%

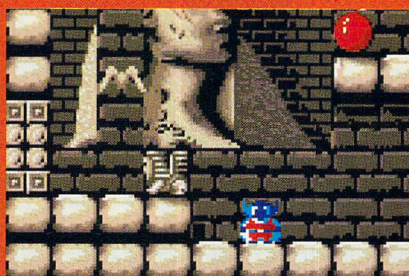
GOT SOMETHING YOU WANT TO GET OFF YOUR CHEST?

Scattered around the screens are treasure chests which you can open only by landing on them and then jumping off. (None of that old key nonsense in *this* game!) These chests contain various helpful items, such as treasure, and sometimes a Mighty Coin, which enables you to

harness *Mighty Power*. This marvellous stuff accumulates in three stages, each stage changing the colour of your tiny bod and helping you to vanquish the baddies. Bonus coins appear from time to time, and there are various other collectable objects that affect gameplay



■ **The treasure chest just to the left of our hero MBJ contains a sphinx...**



Open it up by performing a little Fred Astaire on top of it, collect the sphinx...



And (gasp!) the secret door in the left wall opens, revealing a bonus room

FISTS & FURY



EDITION 2

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DYNAMITE DUX

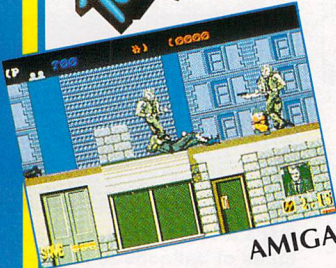


AMIGA

When Little Lucy is stolen by the terrible ACHACHA her two friends BIN and PIN really get angry! When they land a punch KERPOW! No one stands up.

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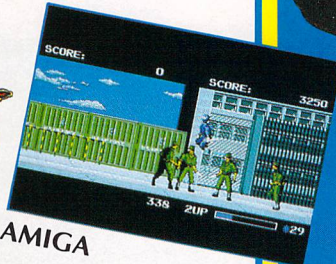


AMIGA

ENJOY FRANTIC oriental action in this Ninja beat-em-up. Search for kidnapped children and dispose of marauding thugs with blows from feet, fists and shuriken stars. Classic Sega coin-op thrills!

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THE NINJA WARRIORS

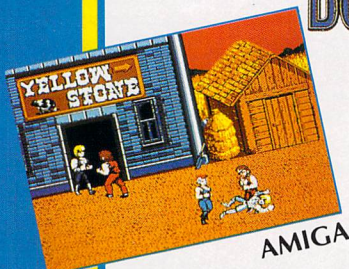


AMIGA

You are MULK, pal ... and as THE totally wicked revolutionary your gonna build 2 assassination machines — The Ninja Warriors — and attempt to chill out the evil master-greek, BANGLER.

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DOUBLE DRAGON II The Revenge



AMIGA

The Double Dragons, Billy and Jimmy, seek to avenge the death of Marian — and might even be able to bring her back to life if they can only penetrate the secret lair of the Shadow Boss.

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AMIGA

We're all familiar with Viz's brand of humour, but it's not an obvious choice for a game. So, have Probe, the programming team responsible for the game, managed to retain the unique qualities that make Viz so special?

Viz the game is a fun kind of olympics with toilet humour. Three of the main Viz characters

– Biffa Bacon, Johnny Fartpants and Buster Gonad – are put through their paces in events best suited to their “talents.” These are

either individual events or a race against the clock and the other characters who are controlled by the ST.

You can choose to play any one of the

three main characters via the main screen. There are also two special solo training events in which you must build up a supply of tokens you can use later on in the big competition.

Biffa Bacon has two solo events. First you must deflect a volley of bricks, by punching or kicking them. Miss one and your token counter resets to zero. The other event is a drinking marathon – several pints



VIZ

VIRGIN £19.99



■ The amazing Viz team – Biffa Bacon, Johnny Fartpants and Buster Gonad – line up for inspection. Ooh, ooh, please sir, can I play?

whizz down a bar and you must grab each drink and down it as quickly as possible. Once again, miss one and the counter resets to zero.

Johnny Fartpants' two events work along similar lines to Biffa's. In the first you have to inflate as many

balloons as you can with Johnny's methane. In the second event Johnny must jet-propel himself as high as possible. The higher you get, the more tokens you can earn.

In Buster Gonad's first event, you must bounce him on his gonads as

high up as possible. The second event has Buster flattening pastry with his unfeasibly large organs.

Once you've collected some tokens, the Fun Run can start. All

the characters take part in this,

with the ST taking control

of the other two. Various

Viz characters such as

Percy's Parrot or the

Parky interrupt the race and try to

stop you from finishing. Press “Fire” and for a short time your character is invulnerable. But if you get hit by an obstacle three times, then the game is over.

EFFECTS

The graphics are excellent: the characters are drawn with great attention to detail and the backgrounds are a lot of fun too. Incidental events happen all the time, so you're often not concentrating on the game itself.

Scrolling and animation are both



■ It's awful when you've got loads of balloons to inflate – your cheeks really ache. Johnny's got the answer though: just use your other set of cheeks...

Hard Drivin' 2

DOMARK £24.99

Produce a half-decent game and you're under an immediate obligation to do a sequel. *Hard Drivin'* gained a respectable 84% when it was reviewed in *STF* 6, but even then it never quite looked as if it was finished. With the release of the sequel, Domark are obviously



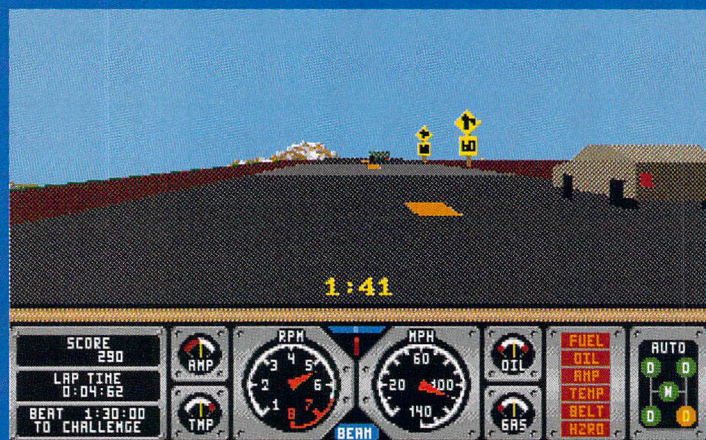
■ Like most racing sims, this one delights in showing your demise in very graphic detail. Remember, as good ol' Jim used to say – clunk, click, every trip!



■ The stunt tracks are full of hazards – loops, dips, ramps, barriers and crazy express riders, to name but a few. Screw up on the loop and there's no more champagne – just a lot of oil...

hoping to improve on the original, so have they succeeded?

Hard Drivin' 2 comes with four pre-set circuits and a course editor that enables you to alter or even completely remake the standard courses. As with *Hard Drivin'*, some



■ Take control of the meanest racer you ever did see – and show the opposition what you're made of. Alternatively, design your own incredibly easy track and sit back as you clock up that high score

courses have two tracks – one on which to practise speeding and the other for when you feel like posing.

There are two different types of car to choose from – an automatic or a manual gear car, and you can use either the mouse or joystick.

Hard Drivin' 2 is better here than its predecessor because it's much harder to lose control of your vehicle. One new feature is the ability to race a friend via a serial link to another ST. In this two-player mode you are the only competitors on the

FUN RUNS AND - ER, JET PROPULSION WITH VIZ



■ The Fun Run is about to start. Roger Mellie puts in an appearance to introduce the starter...



Then he disappears for a bit of real toilet humour. Talk about a cameo appearance!



■ Johnny can collect tokens by farting his way high into the air, so waggle that joystick...



And pump yourself into the air, jet-propulsion style! But what on earth is that man doing?

around the screen in a "realistic" fashion and often come out with Viz-like sayings every time they come a cropper. Sound is great too – a suitably jolly tune plays in the background and there are some decent spot effects.

VERDICT

Viz is a pleasant surprise. Against all odds, Virgin have got a witty, well-programmed licence on their hands. However, the language could be a

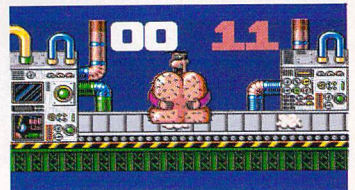


■ Oh dear, Buster's house-sized testicles don't seem to have saved him from that yob with a supply of house bricks. Quite painful to even imagine, really...

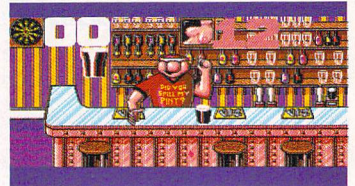
problem for the young – though if you find Viz itself amusing, then you'll have no worries about this.

Gameplay is excellent, although the Fun Run is a bit too hard. Despite trying every manoeuvre I could think of, I couldn't for the life of me complete the event. This is mainly because the game takes a long time to realise you've pressed the Fire button. Overall, then, Viz is great fun but marred by some niggly faults.

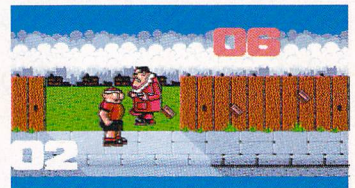
ANDY HUTCHINSON



■ Wondering just how they get the pizza bases so flat? Employ someone like Buster Gonad and he puts his genitals to good use



■ There's nothing interesting on the television, so Biffa plays the ancient British sport of getting drunk as quickly as possible



■ Not a mutha or fatha in sight, but some indecent yob is lobbing those bricks in Biffa's direction. There's fun and games to come!

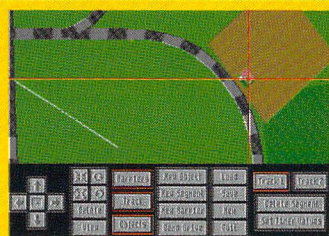
GRAPHICS	9
SOUNDTRACK	8
INTELLIGENCE	6
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	74%

TOO HARD? THEN YOU CAN CHANGE IT

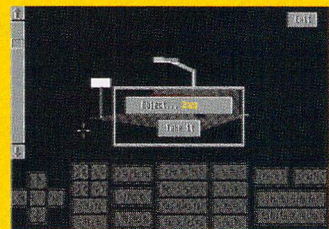
The track editor enables you to build your own customised course. Various sections of road are available, together with objects that you can place along the way. You can also set starting and finishing points and place traffic at strategic locations along the course.



■ Once you get the right part, it's a simple matter to plonk it down where you want it – just move the cursor to the right place and click on your mouse



■ With the editor you can select single objects, move or rotate them or zoom in on them



■ You can select new objects from a separate menu – this is a shop. There are many other objects too – buildings, barns, signs, barriers and even a cow

track, so a game consists of a simple race to the finish.

EFFECTS

At first sight, the graphics are the same as those in *Hard Drivin'*. Fortunately, there are no more stray cars floating through the air or driving through hills – the routine that checks hidden objects has been improved. The 3D display is good too, if a little slow. Sound is no different – there's the familiar tune at the beginning and the same growl during



■ Make sure you jump at just the right speed – too fast and you crash on the other side of the road, too slow and you fall through the gap in the middle

the game. Otherwise there's nothing to get over-excited about.

VERDICT

Hard Drivin' 2 is basically *Hard Drivin'* with four extra tracks and a course editor. There are no radical changes to graphics, sound or gameplay, so the only reason for buying it is if you want the extra course editor. It's certainly not a bad game, and designing courses is great fun, especially when you create something which is completely unplayable. Don't be fooled by the new packaging though – the game is only a slightly improved version of *Hard Drivin'*. Buy it only if you're an avid *Hard Drivin'* fan.

ED RICKETTS

GRAPHICS	7
SOUNDTRACK	6
INTELLIGENCE	5
INSTANT APPEAL	8
LONG TERM INTEREST	7
OVERALL	81%

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Sunday strolls aren't the quiet affairs they used to be. Take one step outside the front door nowadays and you're confronted with drug pushers on every corner and gun-toting villains roaming the streets. Mr Big, drug baron and generally evil person, has taken over the town and uses his henchmen to prevent people interfering with his business. That's not going to stop you though! You must stamp out crime, bust the drug traffickers and ruin Mr Big's day!

You're armed to the teeth too because Mr Big employs an extraor-



■ **That baddie flying through the air has just been well and truly busted. Meanwhile the Red player isn't having much luck – being devoured by a large hound**



■ **The Blue player busts another perp and this one comes quietly. Hurrah for justice, the American way and loud threats of violence**

dinary number of henchmen. They're equipped with machine guns and they're not afraid to use them. Vicious dogs are on the loose as well. They're trained to go for your neck and make rottweilers look like the Andrex puppy.

You can arrest the villains for bonus points but it's much easier to pump them full of lead and forget about them – you can always claim it was in self-defence when filing your report. What's more, when you shoot a villain he invariably drops something useful – bullets, a missile, or even a wad of notes.

There are 12 levels of manic murderous mayhem to make your way through. In the last two levels you're introduced to the wheelchair bound Mr. Big. However, he's not going to shake you firmly by the hand, so it rather looks like you're going to have to kill him...

EFFECTS

The background in *Narc* scrolls smoothly as you make your way through the 12 stages of the under-

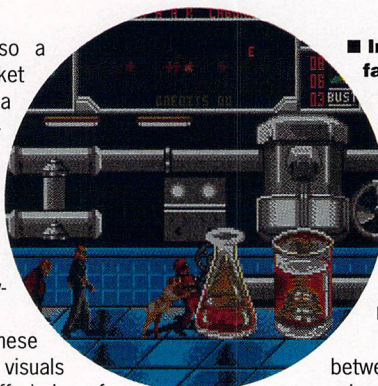


■ **Out on a limb. As well as pumping lead into the drug-crazed fiends you meet on the street in this horizontally-scrolling shoot-'em-up, you can also use a wicked rocket launcher. It takes out several bad guys at once – so crime really does cost them an arm and a leg!**

OCEAN £24.99 Narc

world. There is also a very violent rocket launcher which is a treat to watch. Holding down Fire for a second releases an anti-person missile which explodes on impact, showering limbs everywhere. Lovely.

Unfortunately these otherwise excellent visuals are spoilt by the naff choice of colours. The whole game window is very dark and it's hard to distinguish



■ **Inside the factory on level four. You can destroy those huge jars filled with noxious substances for extra points**

between the background and the sprites – impossible even on Atari's own colour monitor. This is annoying and

frustrating because you simply can't see clearly what's on the screen. It's not lack of skill that lets you down, it's a lack of vision.

VERDICT

Narc is potentially an excellent game, offering large amounts of violence to satisfy blood-lust fans everywhere. It's a bit repetitive though,



■ **After completing three levels you're given a mission briefing**

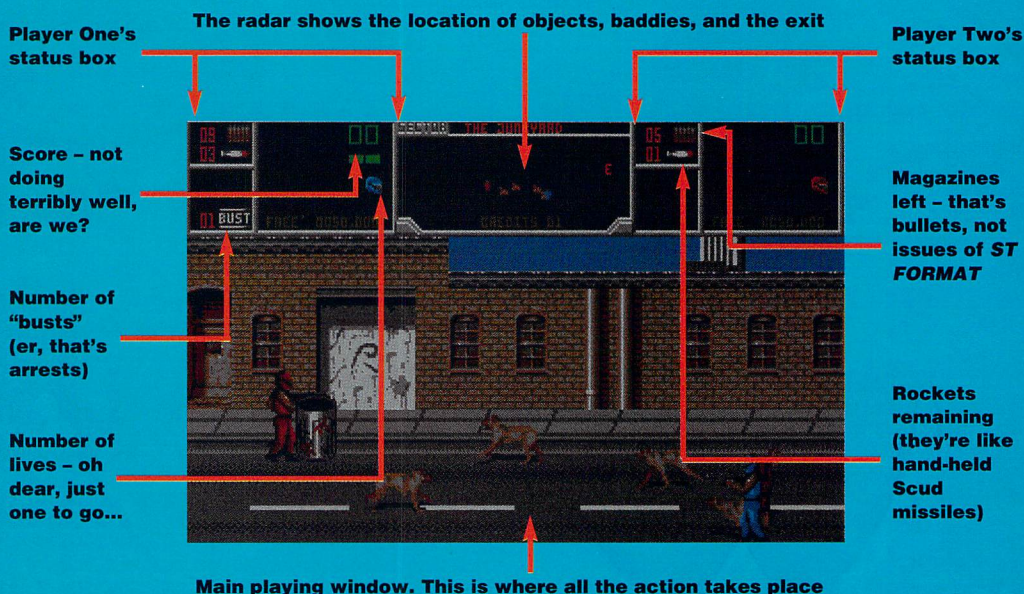
with little variation between levels, and even the most bloodthirsty game-player could tire of killing eventually. The really big let-down is the poor choice of palette. The colours are just far too dull and badly affect the gameplay. Such a shame.

ADAM WARING

GRAPHICS	4
SOUNDTRACK	6
INTELLIGENCE	3
INSTANT APPEAL	7
LONG TERM INTEREST	6
OVERALL	64%

IT'S TOUGH OUT THERE ON THE STREETS

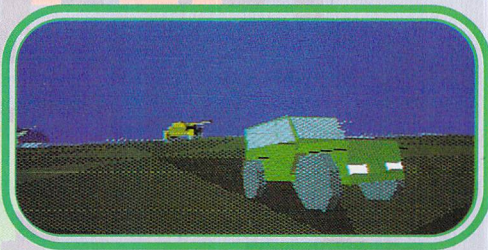
You're armed to the molars and Mr Big and his cronies are still at large. This is an all out assault to clean up the streets you can see on this main playing window – and do it before the other player. Watch out for the wild dogs, avoid Big's henchmen, who'd like nothing more than to see you eat asphalt – and hey, let's be careful out there...



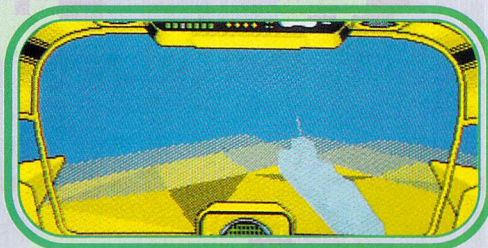
FLAMES OF



Dogfight with opponents over villages for command of the skies, or attack ground targets which serve the enemy's cause.



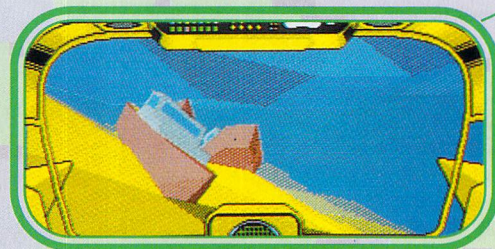
Night time sequences afford excellent cover for secret movement and actions, illuminated by the glare of your jeep's headlights.



The playing area of three million cubic miles is not restricted solely to areas above ground. You have full freedom of movement underwater, and three types of 'submarine' in which to achieve it.

Screen shots shown are taken from the Atari ST versions. Actual scenes may vary by format

Flames of Freedom, the new blockbuster from the creators of Midwinter, offers you total freedom. Freedom of choice, Freedom of action, Freedom of movement.



Seek out and destroy enemy shipping units, condemning them to a watery grave on the sea bed, from where the ocean's surface is clearly visible above.

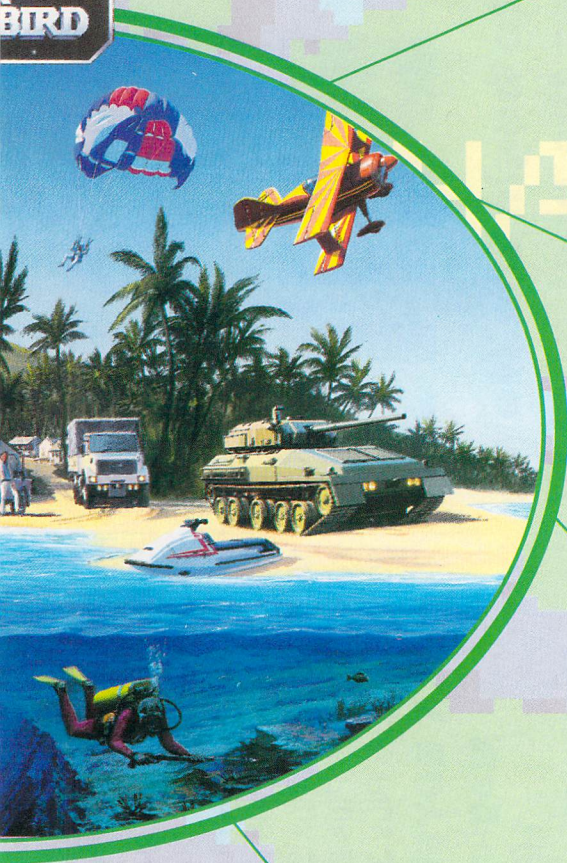
**MIDWINTER
FLAMES OF**

TOTAL FREEDOM- FROM RAIN

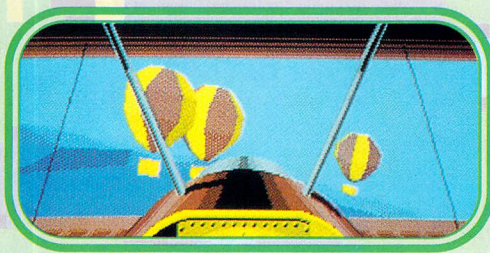
(1,000 miles long X 1,000 miles wide X 15,000 feet high.) + (4,000 characters X 22 modes of

FREEDOM

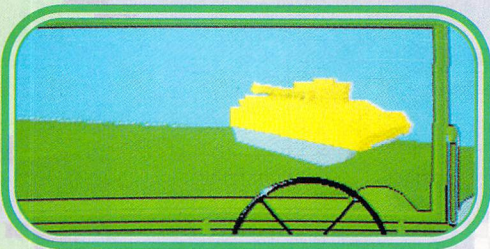
A three dimensional environment packed with action, adventure and strategy. Entering it is easy.....breaking free is what's hard !



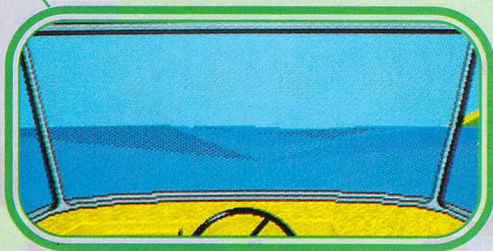
A million square miles of accurately mapped 3-D terrain, generated by fractal techniques, and fully light sourced throughout, provides a playing arena far superior to even its predecessor, Midwinter I.



Fly the skies above the forty-one islands by helicopter, zeppelin, parachute, rocket pack, or, as seen here, biplane and balloon, all offering superb views of the land and of the other aircraft.



The enemy have a vast array for firepower aimed at you, on land, in the air, and across the sea, and react quickly and intelligently to your actions.



The sea surface is generated by constantly moving fractal points, causing you to bob up and down as you swim or sail across it.



BIRD MASTERS OF STRATEGY

transport X 1,000s of buildings) = 3,000,000 cubic miles of Action, Adventure and Strategy.

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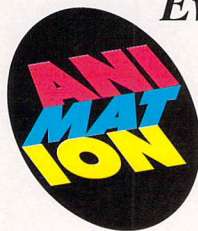
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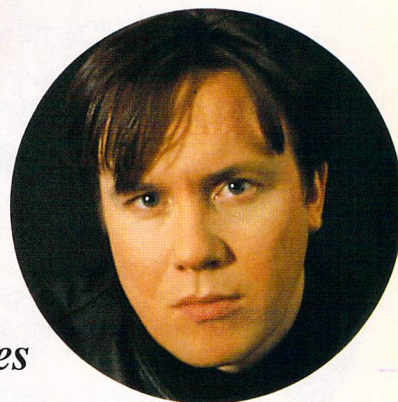
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Bitmaps' Top Ten



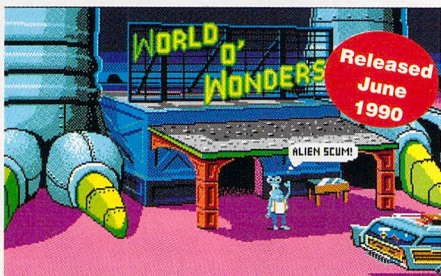
Everyone knows the Bitmap Brothers designed *Xenon 2* and *Gods*. But what games do they themselves rate highly? We ask Bitmap Eric Matthews for his ten best-animated games



DAMOCLES £24.95 STF 13: 94%
Novagen (☎ 021 449 9516)
■ After setting *Mercenary* on a single planet, creator Paul Woakes set about introducing the entire solar system into this outer space adventure. When you get fed up searching for items, just sit back and watch the smooth 3D visuals. Perfect animation in a virtual world



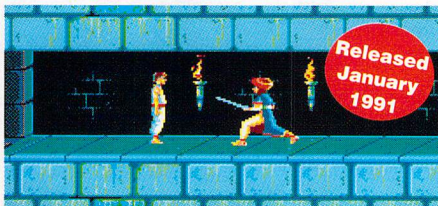
BATTLE COMMAND £24.99 STF 19: 93%
Ocean (☎ 061 832 6633)
■ This recent military masterpiece is a stonker of a tank sim. Drive your tank through some kaleidoscopic 3D landscapes and keep an eye out for the enemy. With a daunting 15 missions to choose from, you've got miles of battleground to roam through



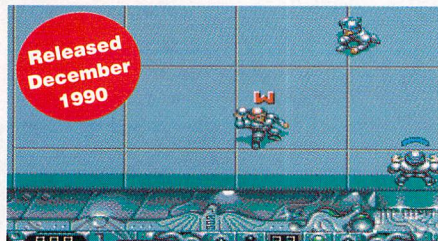
SPACE QUEST 3 £39.99 STF: 90%
Sierra On-Line (☎ 0734 303322)
■ Funny and original graphics – and that's just the box. This outer space adventure has humour, immensely enjoyable puzzles, outstanding animation and a soundtrack from Bob Siebenberg of *Supertramp*. What's more, the puzzles are so manic it's enough to do your head in



XENON 2 £24.99 STF 3: 90%
Mirrorsoft (☎ 071 928 1454)
■ A Bitmap Brothers game – but it deserves a place. A manic, hugely addictive shoot-'em-up with masses of hardware to collect, weird graphics and a storming soundtrack by Bomb the Bass



PRINCE OF PERSIA £24.99 STF 19: 90%
Domark (☎ 081 780 2224)
■ Smooth, detailed animation gives this addictive puzzle game a frighteningly realistic edge. By the time you get as far as the fair maiden you're exhausted



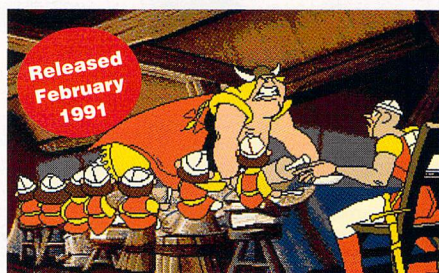
SPEEDBALL 2 £24.99 STF 18: 88%
Mirrorsoft (☎ 071 928 1454)
■ A nasty and very very playable futuristic sports game – you get the chance to rub your opponent's nose in the dirt. Lovely animation, lovely gameplay, hopeless morals



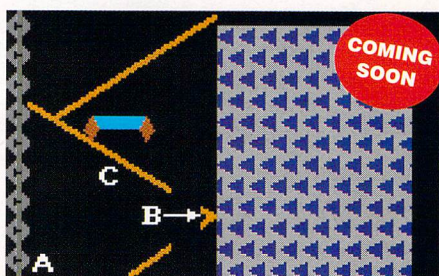
THE IMMORTAL £24.99 STF 16: 87%
Electronic Arts (☎ 0753 49442)
■ If you're looking for amazingly convincing animation, look no further than this State-side adventure. The gameplay's lacking but some excellent visual treats – notably the death scenes – keep you enthralled



STORMLORD £19.99 STF 6: 80%
Hewson (☎ 0235 832939)
■ Another arcade adventure – but one that boasts brilliantly drawn sprites mixed with intriguing gameplay. Rescue the twee little fairies from the great dragons without getting snuffed yourself. Thoughtful touches, like the springs which send you whizzing into space, add to the fun



DRAGON'S LAIR 2: TIME WARP £44.95 STF 20: 58%
Readysoft/Empire (☎ 0268 541126)
■ Cartoon-quality animation, but no gameplay. If you shell out the dosh for this one, you must have someone to impress. As an example of what can be done on an ST, it has no equal – but a few joystick moves don't make a good game



LEMMINGS £24.95 Available soon
Psychosis (☎ 051 709 5755)
■ The ST version promises to be brilliant. Here A, B and C identify particular parts of the landscape that you must guide the suicidal lemmings over. Small but neat graphics coupled with excellent animation make you itch to construct a safe route for the lemmings to follow

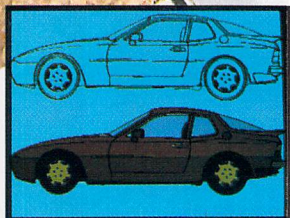
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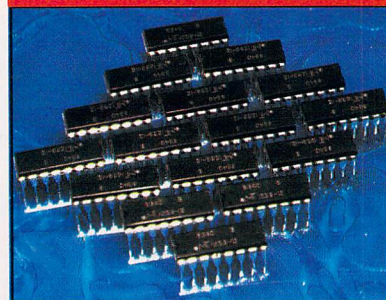
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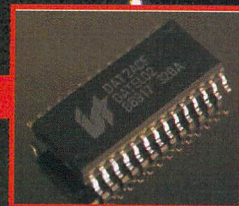
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Screenplay *extra*

"When I was young, I wanted to see Aphreecar... So I travelled but never left... My dream changed... 'I' became 'us' became a portion of the magazine devoted to duff, dire or late games. So while dazzling things dazzle me still, my values hold dear.

My life, with the games review team I still love. I dream of many things..."

WORLD CHAMPIONSHIP SOCCER

Elite - £19.99

There are so many footy games at the moment that this game needs something special if you're going to favour it over all the other versions available. You view the game from above and you can see about a tenth of the pitch at any one time. You can normally see only the top of the players when they move around the pitch, but the rest of the body comes into view when they tackle or

kick. Sprite movement is rapid and smooth, and this makes following the ball considerably easier.

There is a score box and radar off to one side of the pitch. The radar shows your men over a wider area of the pitch than is shown on the screen, and this makes it easier for you to make long distance kicks. Sound is functional at best.

You can choose from 24 international teams and then select the players who you want in your team. *World Championship Soccer* brings nothing new to the art of football simulation, but it's a competent game.

STF Rating - 69%

STEVE DAVIS WORLD SNOOKER

CDS Software - £19.99

There's a funny story about this one. The company mixed up their bar-codes and a new game went out with the numbers for Steve Davis, hence its apparent position in the charts. *World Snooker* is actually a very good program. You can choose from short or long play snooker, pool (both UK and USA) and billiards. You can

either play against a friend or your ST and there are numerous levels you can play at. This means it's easy to improve your game.

The game is viewed from an overhead position all the time. You can vary the cue position, the amount of spin and the power of each shot. In addition, you can show a slow motion replay or cancel a bad shot. The graphics aren't outstanding, but then snooker tables aren't the most interesting pieces of furniture in the world. Some clear samples tell you when you've won, lost or messed up and add a bit of realism.

World Snooker is a good laugh, especially with two players because the ST is a little too hard to beat even on the novice level. An old game, but still fun.

STF Rating - 78%

MORE BUDGET ACTION SIXTEEN

Action Sixteen - £9.99

● Super Gridrunner

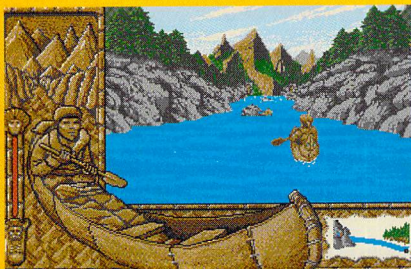
Jeff Minter is the king of the shoot-'em-up. *Super Gridrunner* bears all of his trademarks in a massively playable blasting game. The concept is simple - shoot everything in sight. *Super Gridrunner* slowly leads you in by the hand and then blows a large raspberry in your face when you get too cocky. If you enjoy shoot-'em-ups, go and buy this one - today.

STF Rating - 88%

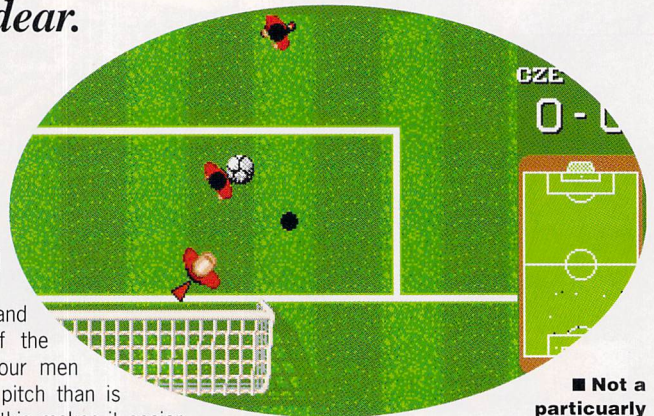
● Colorado

Bit of a weird one, this. You're a frontiersman and you must survive the hardships of colonial life. The game combines river racing, fight sequences and trading sections. There are large, well animated sprites and plenty of sampled sound effects. It bears all the trademarks of a French game - looks great, but lacks depth.

STF Rating - 61%



■ Those were the days of the wild frontier, when men strolled around shooting deer. They lived in the West and they didn't wear vests, but by golly they didn't half smell queer



■ Not a particularly fascinating screen, but then *World Championship Soccer* isn't a particularly fascinating game



■ And here at the Crucible, the crowd are hushed - because they've just realised that it's cost them 30 quid to watch probably the most boring sport on the planet

TEN MISLEADING COMMENTS ON THE BACK OF GAMES BOXES

1. *Graphically stunning* – You'll certainly be stunned by these stone-age visuals: the asterisks are Vagon spaceships and the minus signs are its missiles
2. *One of the most playable games ever* – Z is left, X is right and <Return> is Fire
3. *Super-smooth vertically-scrolling shoot-'em-up* – If you jiggle the monitor up and down with one foot while waving a hand up and down in front of your eyes, you get an incredible feeling of a kind of smoothness
4. *This superb conversion of the brilliant arcade game* – The arcade manufacturer isn't making much money on this one, so he's farmed it out to a software house for an exorbitant fee which leaves them with no money to actually develop the game
5. *Retains all the great arcade action* – Well, sort of. Except for the fact that the arcade game is an 8MByte 9,000 colour machine with eight channel sound that costs £8,000
6. *It'll keep you glued to the screen trying to solve its brain-taxing puzzles* – Yeah, like how do I start it? Which joystick works the thing? Where's the instruction manual? And why is there a disk missing?
7. *Tremendous sound* – Yes, you too can have tremendous sound if you buy this nifty add-on sound cartridge which retails at a mere £350 (ten pounds off if you present this coupon on purchase)
8. *The end sequence is one of the most impressive ever seen* – It may have taken me only two games to reach it, but it's still really impressive
9. *This game truly tests your nerve* – If you can stand to play this game for longer than three consecutive minutes we throw in the sequel free of charge
10. *First class presentation* – Oh yeah, the box is absolutely brilliant and that moulded black injection plastic inside is wicked too – er, where's the game?

TEN ALTERNATIVE USES FOR A DEAD ST MOUSE

1. Hang it from your ear and pretend it's a dead expensive New Wave ear-ring
2. Hide your rare collection of 50 pence pieces in it and wait 300 years until they're really valuable
3. Use it as a chock on your model radio-controlled airplane
4. If your toilet-chain breaks, string the mouse up and wave goodbye to those no-flush blues
5. Stuff it full of nuts and hang it in the garden for the birdies
6. Give it to your dotty Grandad so he can place it with all those other inexplicably collected items of memorabilia that clutter his potting shed
7. Pack it full of plastic explosives and wave it in front of the moles which keep digging up your lawn
8. Cut the lead off, paint it green and stick a bottle top and a match on top. Then write to *Blue Peter* with your plans for a cheap and effective toy tank
9. Tie three dead mice together and use them as bolas
10. Take it along to the the Antiques Road show and see if Hugh "look at the veneer on that" Scully mistakes it for an Elizabethan bed warmer for very very little children

MORE BUDGET BUYS

16 Blitz Plus/Mastertronic – £7.99 Each

Xenon

Those attention-seeking Bitmaps struck out on the rocky road to stardom with this shoot-'em-up. In 1987 it was something of a bestseller but now it looks a tad dated. You must make your way through a plethora of levels, changing between an airborne fighter and ground-based attack craft. If your budget doesn't stretch to *Xenon 2*, then you could do a lot worse than sharpen your joystick thrashing skills on this simple blaster.

STF Rating – 70%



■ Look, we can assure you that you're supposed to pronounce *Xenon* "Zen-on," not "Ecksynon." Did you go to a private school by any chance?

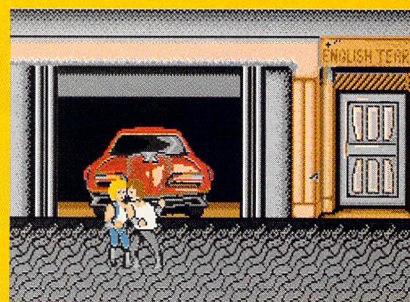
Gemini Wing

Do me a flavour, not another blimmin' oldie shoot-'em-up. *Gemini Wing* is a blaster in the traditional "blow me, there's rather a lot happening on screen" mould. Zillions of power-ups and simultaneous two-player action make the game worth a look if you enjoy that kind of arcade action. Things can get very frantic very fast though.

STF Rating – 64%



■ Ground control to Major Vom in *Gemini Wing* – open loading bay and discharge forward load. Now *that's* what I call a real power-up!



■ *Double Dragon* was an arcade classic, but just look at the visuals on this version. It looks as if a pigeon has left his mark all over the screen

Double Dragon

The original arcade game is a wicked laugh, but this conversion is disappointing. The sprites are very small and there are two or three glitches which can make it hard to finish a level – jumping up onto the boxes is nigh on impossible. The game is more fun with two players, particularly when one of you is getting beaten up and the other just looks on gleefully.

STF Rating – 71%

Silkworm

This is one of the earliest shoot-'em-ups from the team who brought you *SWIV* and *ST Dragon*. The most appealing aspect of this game is the simultaneous two-player action, where one of you controls a helicopter and the other controls a jeep. Gameplay is fast and furious and there are some particularly nice power-ups available for those especially tricky attack waves.

STF Rating – 73%



■ In *Silkworm*, we've got Airwolf on our side and no-one's gonna get the better of that cello-strumming copter pilot Jan Michael Vincent – so there

FORMAT RATINGS FOR THIS MONTH

How did they rate this issue? These are the games **FORMAT** reviewed this month

Wrath of the Demon	page 54	83%
Hard Drivin' 2	page 70	81%
Codename: Iceman	page 66	77%
Curse of the Azure Bonds	page 62	74%
Viz	page 70	74%
Super Monaco Grand Prix	page 64	71%
Team Suzuki	page 59	69%
Narc	page 73	64%
Revelation!	page 61	64%
Mighty Bombjack	page 68	48%

BACK WITH A VENGEANCE

Almost every games publisher is pumping new life into budget releases at the moment. Now US Gold get in on the act with their early hits

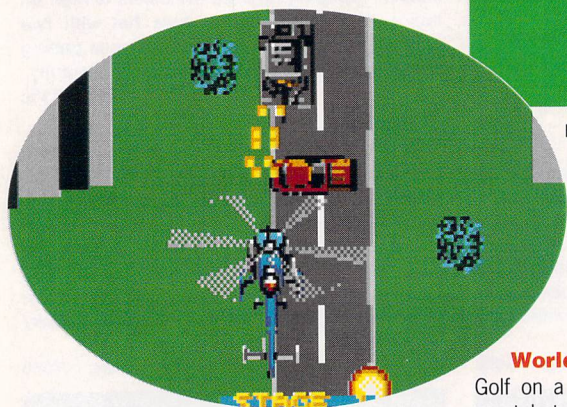
Kixx are one of US Gold's budget labels and they've just released eight old games, each retailing for £7.99. Here's the full list and the ones worth bothering with.

Vigilante

We reviewed this one way back in *ST/Amiga Format* in issue 11. Originally it got 70%, so has time eroded the rating? Ermm, yes.

The gameplay is positively sluggish and the graphics look like they've been lifted from an 8-bit machine. The sound is boring as well. You must duff up the thugs that come on screen by moving the joystick in any of eight different directions – that's about it, really. There are far better beat-'em-ups around at a budget price, without the budget gameplay.

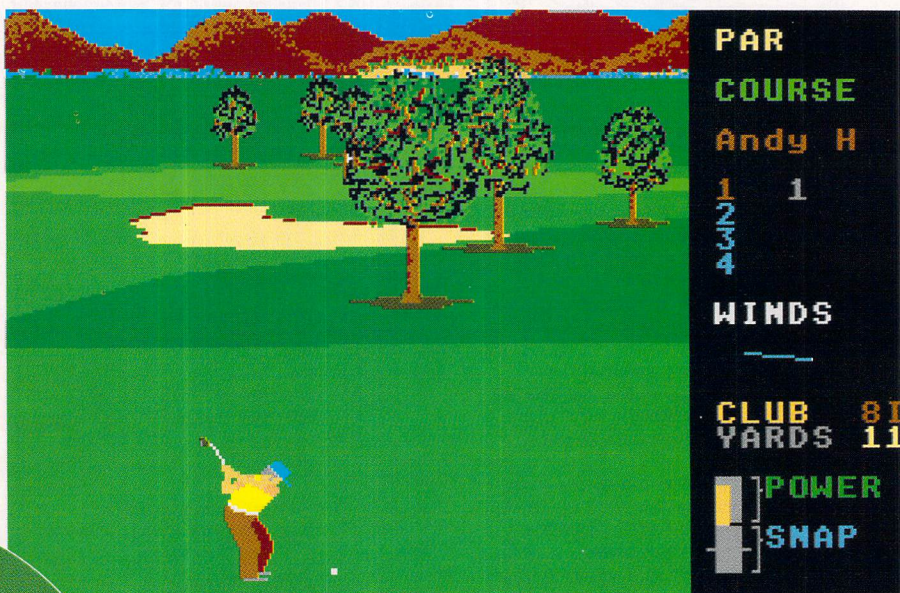
STF Rating – 35%



■ **Death, destruction, napalm, annihilation, laser sighted bombs and B52s. Just another day in downtown New York**

Thunder Blade

Way back in 1988, *Thunder Blade* was touted as the Christmas number one. It never made it. The programmers took on too much when they tried to convert this helicopter shoot-'em-up. The biggest weak point is the positively dire control method – simply moving up and down requires considerable thought and four pairs of hands. Animation slows down markedly when



■ **Golf must be just about the only game on the planet where you end up feeling sorry for people who earn 50 grand for coming last. "There there, Nick, cheer up. You won the Range Rover, didn't you?"**

big buildings come into view and you can even fly the rotors straight through passing buildings.

STF Rating – 34%

World Class Leaderboard

Golf on a computer is always tricky to implement but Access Software make an excellent job of it. The gameplay is smooth and the animation is crisp and realistic. You can play on four courses at four different levels – novice, amateur, expert or professional. There are some quite tricky holes on the course too. Well worth eight quid.

STF Rating – 82%

Gauntlet 2

Excellent game, this. The big feature is the four player option, which few games implement, even today. Wander around a labyrinth as either

a Wizard, Elf, Warrior or Valkyrie. Gameplay is superb, with wicked adversaries, like the "It" monster, and loads of other great features. Sampled voices add to the excitement – you can't get away with shooting food, for example, without a voice pinpointing the guilty player.

STF Rating – 86%

Outrun

Blimmin' heck, this really is going back a few years. The game isn't much cop anyway. You drive a super-car around a motorway race track, while avoiding lorries, bushes and VW Beetles. Go for one of the more recent racing games instead.

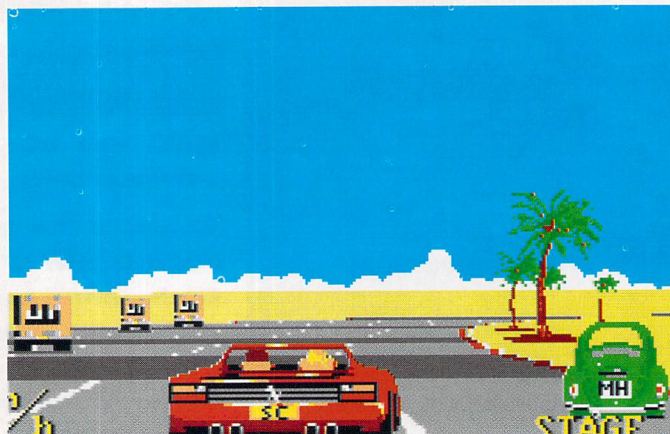
STF Rating – 38%

Road Blasters

Originally from Atari, this is basically *Outrun* with a gun. You drive a super-charged car with a nice



■ **Welcome to Sellafield nuclear power station. Please ignore those large green puddles of glowing liquid and the haggard gentlemen to your right with very little hair. Oh, and please remember – no flash photography inside the perimeter fence**



■ **This abysmally awful car-racing game made it to number one in the charts during Christmas 1987 only because of a great advertising campaign. Now it's where it belongs in the bargain basement, along with other has-beens and never-shoulda-bins**

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line in power-ups. Stay on the road and shoot all the cars and helicopters, but be careful to avoid the road-mines. The action in this one is severely dated, and even at £8 *Blasters* is a bit of a rip-off. It's a far better idea to save up and buy something special like *Stunt Car Racer* which is much more fun and more of a challenging 16-bit game.

STF Rating – 43%



■ The police today announced that as from Friday you can use heavy-duty large calibre weapons on the M25. They believe this reduces the strain of driving – and it's really enjoyable to watch too

Blasteroids

Blasteroids is *Asteroids* with nice backdrops and some power-ups. The idea is to shoot rocks as they whizz about the screen by rotating and thrusting your ship.

The game is very dated though, even with the attractive graphics and quick gameplay. The teeny sprites and duff sound tend to put you off. Worth a look if you're a starved shoot-'em-up fanatic or an ardent *Asteroids* fan.

STF Rating – 62%

■ In *Blasteroids*, the old favourite *Asteroids* steps boldly into the next century with a severe hangover and some pectoral-bruising military hardware

Barbarian 2

The original *Barbarian* persuaded loads of punters to invest in an ST. Palace decided to expand on the first game by varying the opponents and introducing an exploring element. As this kind of game goes, this one is still a blast. There are some juicy sound effects to accompany your sword chops and the creatures certainly look weird.

STF Rating – 56%



■ What, *Barbarian 2*, that good clean find-'em-and-chop-'em game, sexist? Some mistake surely. Let's play "count the number of clothing pixels hiding the young lady's body"

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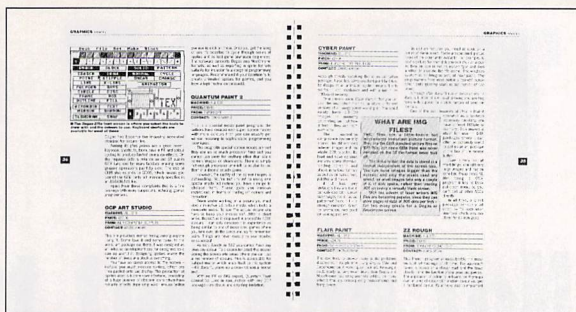
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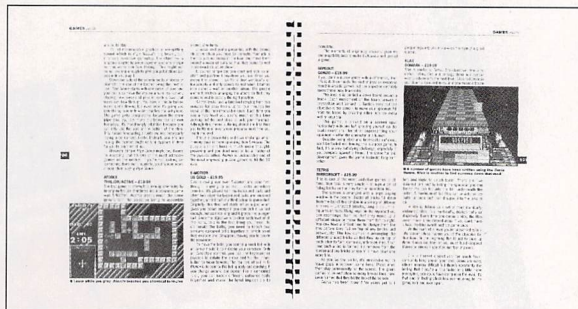
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smalls really clean without a boil wash! Nah, don't believe that one...*

CADAVER

Back in **FORMAT 19** we brought you the first part of a complete solution to this sprawling graphic adventure, courtesy of John Sweeney from Nottingham. Now here's Level Two of John's solution

Warrior's Shrine: Shot Shield Potion, Massacre Spell, Shuriken.

Inner Chapel: Use Shot Shield and Shuriken to destroy monsters; Stamina Potions. Get Teleport Orb → Ante Room (W,N from where you were)

Ante Room: Number levers from left; pull 13211 then press button – opens W without activating any traps.

Outer Chapel: Jump at Floating Eye to destroy it. Avoid Poisonous Blob. Token "U."

Lord's Shrine: Jump at skulls to raise drape – N unlocks MUCK later automatically. Recharge Mindblast from Reliquary by inserting it in casket, then casket in strongbox. It is now strong enough to destroy a blob – keep it for the end of this level.

Reliquary: Insert Ahes in Urn – you need the Urn later. Mindblast Spell (needs recharging). Jump at skull to go N.

Secret Room: Throw unwanted item through gap (anything that disappears here reappears in North Chamber), pull lever, duck under stones to E.

Next room: pull lever to unblock E – you open this door from the other side *much* later.

Chapel Armoury: Shuriken; Pull lever when both diamonds are dark to leave room.

Feasting Hall (E): Token "W", Sleep Spell; block the darts with piles of objects. Keep gong in and out and sacks appear. Keep picking them up and eventually they have gold.

Feasting Hall: (W): Button → N; lever on throne → button → book.

Side Hall: You need an Emerald to go E – *much* later; take note of the route N at top of stairs.

Back Passage: Pull lever to access chest from above; go to chest via Side Hall stairs; jump across gap to get key; Teleport Orb takes you two rooms N.

Note, this is a magic chest – keep opening

and closing it for infinite gold! Get your gold now – you can teleport out only *once*.

Kitchen: Super Fast Potion.

Wash House: Cure Poison

Cook's Passage (W): Sleep the Eye to stop a Teenage Mutant Ninja Tortoise appearing; you need K2 to go N.

Cook's Room: Jump on bucket, float up and open chest → **K1**.

N.B. You can cheat in a few places by using the floating bucket and pan to climb up high – you don't *need* them, though.

Cook's Passage (M): Sleep the Eye to remove Bars.

Boy's Room: Stand on chest, lever in trophy → W.

Maids Room: Button → N; Teleport Orb takes you two rooms E; take the alcohol – it has a use much later.

Cellar: Knock the bottles off the shelf to get the key and some gold.

Cooks Passage (E): K1 →

Granary (U): The key is under the stairs → chain → up (just jump at it). *Don't* kill the poison blobs – killing the two blobs teleports you to the Lost Room, but you can only get there once and you haven't got the key yet.

Lost Room: Read the bit above – you haven't got the key yet! See end of level two.

Top Passage: K3 opens bars. The large square tile activates the eastern bars. You can only touch it safely when the diamond is dark. Mind Blast Spell, Token "L." (There is an alternative route to the room past the eastern bars.)

Ward Room: Teleport Orb (takes you to this room!). Right button shuts off dart trap. Left button ???

Main Passage: Where the skulls keep teleporting you back: Sleep the eyes to shut off the skulls. E door unlocks from the other side only. Side Passage: W of main passage (N): Lever raises lift – access it from the room to the west; Freeze Spell, Strength Potion.

Guard Room: Stand W of chest to make blob push it off.

Ward Passage: Massacre tortoise → key → W (the alternative route to the Ward Room if you activated the bars in the top passage).

Cell: Lever opens bars: gold, shuriken. Trapped! Wait → mat (slightly magical??), gold, Suicide Potion; throw Suicide Potion at mouth to open bars.

Side Passage: E of main passage (N): left lever → lower platform; push platform over pit; get on; right lever raises platform; go N.

Guard Room: Use key to go E.

North Chamber: Sleep eyes; SQUARE GEM,

BLOOD MONEY

Psygnosis

This cheat for this getting-on-a-bit-but-still-very-good-thank-you-very-much game wings its way from **Graham Cruickshanks** of **Kirkcudbright** in Scotland. On the options screen press F4 for Impatient, then quickly press the S key. The screen remains black. Now type in the phrase PONDULIX FOR PM. Hit Help during play to toggle cheat mode and infinite lives. These keypad keys also do wonderful things:

1: more dosh for player one

2: ditto for two

4: player one enters shop

5: player two ditto

<Delete>: move to next level (if you've got enough money)

CHASE HQ 2

Ocean

Chasing giving you probs? **Matthew Adams** and **Ben Lincoln** from **Kent** have some advice. Hold down H and F5 while the game is loading and all obstacles such as trees are removed from the game.

GREMLINS 2

Elite

A musical tipette from **Steven Powis** of **Essex**. Simply type SINATRA into the high score table to gain infinite lives.



■ Next from ol' blue eyes – New York, New York. Available for parties...

KICK OFF 2

Anco

A spherical-shaped tip from **Edward Herft** of **Watford**. This enables you to substitute the ST's players – so you can, say, replace its goal-keeper with an attacker. Start the game as normal, then press your substitute button. Then press what would have been player 2's substitute button *before* the game asks you to select a sub. The ST's players are now shown and you can select who to replace.



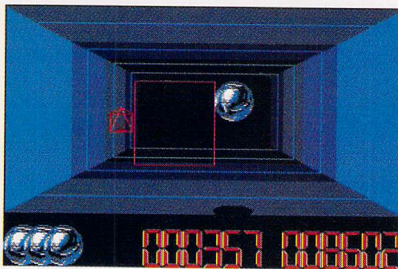
■ This hapless chap looks as if he could use **FORMAT's** guide to choosing doors...

(continued page 91)

LIGHT CORRIDOR**Infogrames**

Here are the stage level codes for this executive toy type original game, courtesy of **Anthony Rushton** from **Hull**.

Level 1:	0000	Level 26:	8215
Level 2:	5400	Level 27:	5116
Level 3:	0101	Level 28:	0117
Level 4:	9901	Level 29:	7017
Level 5:	2602	Level 30:	5518
Level 6:	9902	Level 31:	2819
Level 7:	4303	Level 32:	9919
Level 8:	9003	Level 33:	7320
Level 9:	6904	Level 34:	2521
Level 10:	3305	Level 35:	0622
Level 11:	9305	Level 36:	3722
Level 12:	3406	Level 37:	1223
Level 13:	0407	Level 38:	4523
Level 14:	6407	Level 39:	4124
Level 15:	2008	Level 40:	1825
Level 16:	7408	Level 41:	1926
Level 17:	4709	Level 42:	9726
Level 18:	3810	Level 43:	5927
Level 19:	0511	Level 44:	0528
Level 20:	6811	Level 45:	7328
Level 21:	3212	Level 46:	3929
Level 22:	0213	Level 47:	3030
Level 23:	8213	Level 48:	0531
Level 24:	5014	Level 49:	8431
Level 25:	1015	Level 50:	9932



■ **The Light Corridor, you say? Well okay, smartie, why's it so dark then?**

LOST PATROL**Ocean**

Fear not! Find the patrol and eternal happiness (possibly) with these stonking tips from **Daniel Perkins** of **Notts**.

1. Make sure Weaver does not take the lead.
2. Whenever you move three times, rest for 30 minutes.
3. When you reach the village, Question Hard. Ask the old man where the food is. Then Search Area to find a tunnel. Send Gomez down – most of the time he returns with some goodies. Always search after an encounter.



■ **Lost? We prefer to call ourselves the Temporarily Dislocated Patrol, actually**

CAPTIVE

Last issue **FORMAT** brought you two pages crammed full of *exclusive tips* for this gob-stopping maze-type adventure, courtesy of **Tony Crowther**, the programmer himself. Now here's some more inside secrets from **Tony**

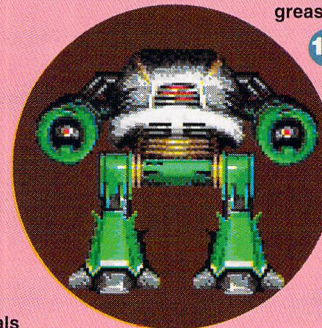
- 1 Here's a handy list of the Devices available to you:

Optics:

1. Ag-Scan: alien pain viewer.
2. Route-Finder: guides you around.
3. Mapper: maps your route for you.
4. Radar: highlights aliens from afar.
5. Magna-Scan: a compass, basically.
6. Body-Scan: quick reference to droids.
7. Visor-Corrector: reveals secret passages.
8. Visor: shield vision from blindness.

Devscapes:

1. Anti-Grav: sticks you to the roof.
2. Shield: shields all the droids.
3. Fire-Shield: shields from fire.
4. Greaser: oils limbs for fast action.
5. Power-Sapper: unknown.
6. Fixer: repairs a droid when used.
7. Re-charger: recharges a droid.
8. Deflector: deflects all shots and sends them back where they came from.



■ **Knowing this monster's name helps you not a jot**

- 13 It is possible to fly through the base using the mapper as an aid and the greaser for extra speed.

- 14 Mines increase in power as you go through each base.

- 15 Federation Guards hit you so hard your limbs fall off, so remember to pick up your bits.

- 16 The Deflector defends you against all aliens – but silly things can happen at close range, so beware.

GO MUNCH THE MONSTERS

The names of the monsters are listed below:

Alien Battle-bug Brains Cager Crab Crit-fur Death Doormen Dragons ED-R19K Fed-Guard Fed-Android Fire-Snakes Fire-spirit Floatball Goblin Gowl Go-Rot-Worker Guard-dogs Gunner Hovver-Troop Minos Plant Popper R2-Shell Spinner Tank Trackball Troops TV-Guns U-Tank Waterpod Workers Diplodocus Tryana Terrydact Triceptor Lizard

SNIPPETS

■ **Armour Types (grades):** BASIC, II, III, IV, V, VI, VII, SUPER

■ **Droid and body part types:** Human Tindron Coppator Bronzite Ironide Chromize Silvosh Rosteed Stenforcer Titaniux

THE WEAPON SYSTEMS

SKILL	AMOUNT	WEAPON	AMMO
Brawling	00	Unskilled	
	01-08	First	
	09	Knuckle-Duster	Basic
	10	Knuckle-Duster	II
	16	Knuckle-Duster	Super
	17-24	Battle-Gloves	
Swords	00	Unskilled	
	10-08	War-blade	
	09-16	Light-Blade	
	17-24	Fire-Axe	
Handguns	00	Unskilled	
	01-08	Pistol	20mm
	09-16	Colt	45mm
	17-24	Magnum	50mm
Rifles	00	Unskilled	
	01-08	Uzi	a22mm
	09-16	Rapedo	a45mm
	17-24	Booster	a50mm
Laser	00	Unskilled	
	01-08	Hand-Laser	Laser Pack
	09-16	Lyte-Zapper	Laser Pack
	17-24	Ion-Pulse	Sonic Pack
Cannon	00	Unskilled	
	01-08	Mono-Cannon	Shells
	09-16	A51-Launcher	A51 Mis-
siles	17-24	Twin-Cannon	Shells
Spraygun	00	Unskilled	
	01-08	Airosoll	Poison
	09-16	Acid-Disperser	Acid
	17-24	Flame-Thrower	Canister Flambo
			Canister



■ **Life would be so easy if all you had to do was get to this lander and use it...**

CADAVER (continued from page 88)

TRIANGULAR GEM. Go back up stairs; W, S, S, E (stay high up) to Upper chamber.

Upper Chamber: CIRCULAR GEM; Unlock Chest Spell (@) – use it here on two smaller chests (unless you are desperate for the gold in the largest chest) → Bless Potion Spell, Stamina Potion.

Side Chamber: Use Strength Potion to move pillar and knock gold, Stamina Potion, and key off high shelf (if they get stuck on top of pillar then push it back to its starting position to knock them off). Use key to go W.

Main Passage: (with triangular Gem Lock):

Use three gems to go E.

Side Passage (1): Drop a shield or bowl on spikes; jump over; edge forward; repeat.

Side Passage (2): Throw key through; walk up to bars –

■ **In the Back Passage there's a magic chest that keeps giving gold!**

they should open; get **K4**.

The S door leads back to the Lord's Shrine. It opens much later by itself as long as you don't put the eye to sleep!

Side Passage (3): Go in and out both doors until the blob pushes the teleport orb through the bars. Don't take it yet; go N to open a route round the back of the bars.

Barrack: Stand on bucket to reach left drape → button → chest → gold, chicken.

Captain's Room: Button → hole; insert spike from next room to unlock the E door in the Barracks; Gauntlet.

Armoury: Spike, gold, key; move rack to find keyhole; pull chain to exit.

Guard's Store: Meat; alcohol; take alcohol to use later; feed meat and chicken to mouth to unlock S. Now go back and get teleport orb (takes you one room E).

Side Passage (4): K4 opens bars and E door.

Guard Hall: Lever frees TRIANGULAR GEM; push it clear with another item; stand clear of blocks when you pick it up.

Guard Chamber: Food, poison; throw food and poison at mouth to get gold and unlock door.

Ward Room: Push board over pit; raise it three times with lever; jump from stairs to board; push button → flames in outer ward move.

Outer Ward: Duck under flames once you have made them move → CIRCULAR GEM.

Lookout Room: Second bar from right lets you in; second from left lets you out; Map Spell, gold; lever unlocks S door from Ward Room.

Lord's Chamber: First go down the corridor to the East Chamber to get the SQUARE GEM; use THREE GEMS to move altar.

East Passage: go through quickly.

East Chamber: Button starts board moving; avoid bars by moving between board and central island; far button opens W; Unlock Door Spell, SQUARE GEM. You should get the gem and go back and do the area below the Lord's Chamber before continuing W from here.

Secret Tunnel (1 & 2): Button → Teleport one room E; W to get key; Key → E.

Secret Tunnel (3): the Eastern Door is a fake.

Lord's Armoury: Shuriken; wield the Gauntlet to open chest → gold.

Lord's Treasury: gold; Sacks of gold, Lead Casket; use the Lead Casket to smuggle the sacks through the Side Tunnel one at a time.

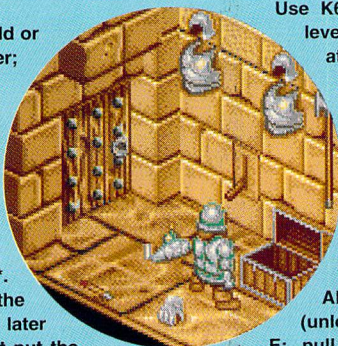
Side Tunnel (W): Lever removes bars if you return sacks to Treasury.

Great Chamber: **K5**.

Side Tunnel (E): K5 → N(E).

Lord's Cellar: Alcohol; drop all this *plus* the stuff from the Guard's Store and the Maid's Room into the Punch Bowl → Stamina Potion! Axel's Chamber **K6**, **K7**: Throw Sacks of Gold at mouth for info. Activate Teleport Orbs with skulls. Push Orbs off to find real one: Teleport Orb takes you back to Lord's Chamber; go from there to East Chamber and exit to W.

Lost Passage: Wield your Unlock Door Spell and use it on all the doors: N, N, N, W, W, W, N; Pull lever → gold plus Unlock Door Spell disappears; various bars and doors within the maze have changed.



Use K6 to go W if you pulled the lever in Secret Room (2) way back at the beginning of the game to unlock the door. If you have, you can go W to find the EMERALD, then carry on to the west, but before doing so you may wish to get a Stamina Potion: go S, E, S, S, W; pull lever; N, N, N. If you didn't pull the lever you can still get the EMERALD: S, E, S, S, W; pull lever (unlocks all doors); N, N, E, E, N, E; pull lever (generates alternative

EMERALD in SE corner of maze and locks some doors, plus provides temporary Teleport Orbs in some rooms of maze); S; get orb; get EMERALD. You can now reach the NW corner of the maze by: N, W, get orb, N, E, S, get orb); S; retrace your steps – the door from the Side Passage (2) S into the Lord's Shrine is now unlocked, as long as you didn't Sleep the Eye. Now that you have the EMERALD go to the Side Hall and it enables you to go east to the Captain's Hall, but first you may like to visit the Lost Room.

The Lost Room is at the bottom of the Granary. You must kill *both* blobs. (If you slept the Eye in the Granary to prevent the second one then you can't get there.) You need over 40 Mind Blast power. Unless you brought some through from Level Two you need the Power 50 Mind Blast made by recharging the zero Mind Blast. Cast Mind Blast



■ **Just look at that mess in the corridor! I dunno, can't get the staff these days...**

to kill *both* blobs and you are teleported to the Lost Room.

Lost Room: Gold; use Lost Room Key (K7) → 1,500 gold plus Pint of Ruddles County (one of the Best Beers in Britain!) Just wait and you are teleported back to Granary.

Captain's Hall (W): Drop Urn (with ashes inside) on empty block; drop EMERALD on empty block (don't mix them up – your EMERALD *must* go on the empty block); drop six Teleport orbs down the hole which appears in the middle of the floor.

Captain's Hall (E): As long as you have been told that you have only one task left to perform, pull the lever; step into the red circle; wait → LEVEL THREE!

■ **And for that, be here next issue!**

➤ **4.** At the village on stilts, shoot a villager, Question Hard and ask for food. Shoot another villager, question again for food and ammo, then get out!

MIDNIGHT RESISTANCE

Ocean

Midnight Resister **Lee Mansfield** from **Surrey** suggests these Weapons Ratings:

Shotgun okay; three-way excellent; Full Auto okay; Fire thrower rubbish; Ammo excellent; Auto okay; 1 UP excellent; Shower rubbish; Nitro okay; Homers excellent.

For infinite credits, pause the game and type in SAMANTHALYON.

MONTY PYTHON'S FLYING CIRCUS

Virgin Mastertronic

Information from our man in the Ministry of Silly Walks, **Steven Nicholls** of **Weston-super-Mare**. Type your name as SEMPRINI on the Extremely Silly Scores table to start on any level you've reached. Insurance Sketch! Insurance Sketch!

NITRO

Psygnosis

Marie Wilson ('ere, wasn't she a singer?) from **Devon** says that typing in NITRO at any time in the game takes you to the next level. Ooh!

RAMBO 3

Ocean

Don't push me... instead, type RENEGADE into the high score table, then you can press 1, 2 or 3 to get to the corresponding level. Thanks to **Christopher Winnard** from **Cleveland**.

SKWEEK

Loriciels

This noisy tip for reaching random levels comes from a strange chappie who calls himself **Richypoos** from **Poole** in **Dorset**. On the option screen press F2 while holding down the Spacebar. And that is, as the well-worn phrase goes, all there is to it.

TOYOTA CELICA GT RALLY

Gremlin

Mark Brown from **West Sussex** gives this rallying cry: start the engine, then press the C key. When the chequered flag has risen, you've completed the stage in first place. Repeat this for all 30 stages to win the game.

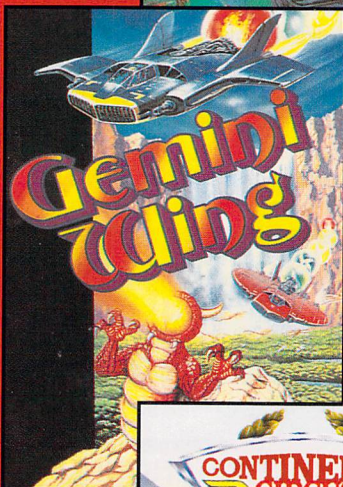
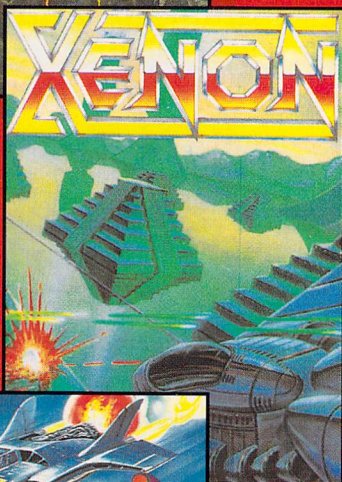
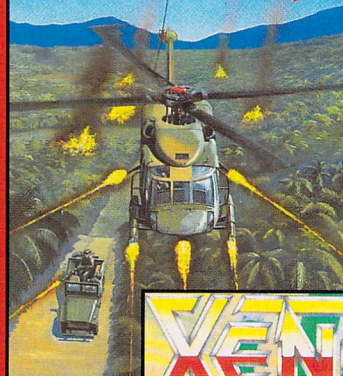


■ **Forget all those tricky Rally obstacles! Why sweat when you can cheat?**

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BATTLE MASTER

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Scenario One: Dorin's Delve

Level one consists of a money chest at the lower right of the scenario and cave entrance to level two. You can get the chest by simply walking along the cliff face. However, doing this also means that you take one hit from an arrow volley.

Level two can be found by walking up the dark brown earth track to the cliff face. However, this triggers the sentries, and if you want to avoid this you can try to sneak around the bushes on the left hand side. Once you're at the cliff face you should be able to trigger the cave entrance by walking up and down.

Level two itself consists of a corridor with stairs at the end. You should try to walk in the centre of this – there are loads of pit traps present. At the end of the corridor you can walk up the stairs to level three.

Level three opens into a small room with a locked door. This can be opened by moving to the lever in the wall on the left hand side. If you walk up and down in front of the mirror, you should be able to find a secret code.

Scenario Two: Dulham

Dulham simply consists of a few huts, some humans and a pit trap. The trap is at the end of the road in the middle of the village. Trigger this and your rear and huddle formations suffer losses. You can enter the one locked hut by getting a key from the hut to the right behind the locked one.

Scenario Three: Brightleaf

This is an elf scenario. It consists of a large transporter field and an underground section. You can escape from the transporter field by getting the spade and walking up to the tree behind the small green knoll.

The underground section can be accessed by walking over the bridge and into the cave on the far left hand side. Once there, you should pick up the small glowing stones, since they can remove stalactites.

Scenario Four: Axehead Hill

Here you're faced with two caves. The one nearer the river contains the pit disabling lever which you must use in exactly this manner – otherwise the other pits still work.

After you've wiped out the two orcs, you should be able to walk right up to the lever and then away again. Do this and you should now see that the lever has in fact changed position. If you now enter the other cave you can kill the orc in the alcove and continue to follow the passage to the end, where it turns left. At the end of this passage is a room, after which the passage continues. You should make sure you stay on the left hand side of this room.

Once you've left the underground via the cave at the end of the passage, you should find yourself on the other bank of the river. The cave nearest the river needs to be entered carefully. Once you're inside, move left as far as possible and then up. You now find yourself in a cave full of spiders and moving down transports them out again.

SPEEDBALL 2

Mirrorsoft

Christopher Preston from Walsall ought to be ashamed of himself. He's sent in tips to create even more violence and bloody conflict in this corking future sport game.

Money

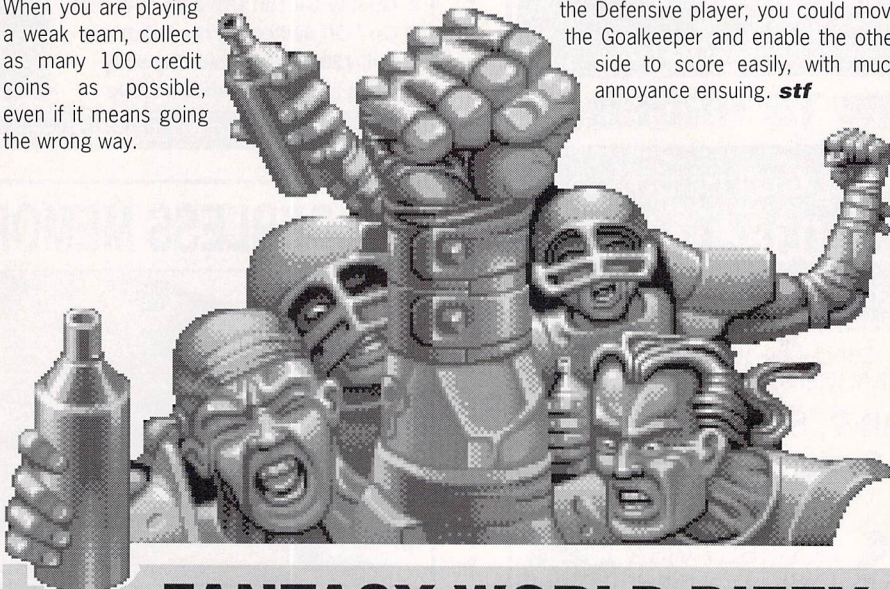
When you go into the league you begin with 1,100 credits. You could go straight to the gym and improve the team that way, but if you save your money and wait until star players come onto the transfer market, you can improve the team more for the same amount of money. When you are playing a weak team, collect as many 100 credit coins as possible, even if it means going the wrong way.

Buying Players

The three most important players on the team are the Goalkeeper, Central Midfield and Centre Forward. These are the positions where star players are most effective.

Defence

It is best not to control the Left and Right Defensive players, just the Goalkeeper. This is because usually you're controlling a Defensive player when control switches to the Goalkeeper without you realising. Thinking you've still got the Defensive player, you could move the Goalkeeper and enable the other side to score easily, with much annoyance ensuing. **stf**



FANTASY WORLD DIZZY

Codemasters

Following **FORMAT's** recent complete solution to *Treasure Island Dizzy*, here's the low-down on its companion game from Stephen Aizlewood of Chesterfield.

Get the jug of water and drop on flames. Get loaf of bread. Don't give the apple to the troll because he appears elsewhere and prevents you from collecting some treasure!

Get boulder from other side of water where Snappy Happy Gator lives. Jump across on the second snap of his jaws. Leave both boulders on main staircase and go to the top of the castle to get the meaty bone and shiny gold key.

Go back down to main staircase and drop shiny gold key. Get boulder from near Armagog, drop meaty bone. Go back to main staircase and pick up another boulder. Take these two boulders to the Broken Bridge and drop them in the water. Go back to the main staircase for the third boulder and drop that in the water. The water level rises, enabling you to jump across safely.

Get shiny gold key and go to end of Pier to get the sleeping potion.

Go right back to where the Gator lives, jump across and drop the sleeping potion close to the Dragon. He falls asleep, enabling you to pass.

Take the shiny gold key to the Lift Control Room and activate. Carry on past the manure heap and oak tree to get another shiny gold

key from near the volcano. Take to Lift Control Room and activate. Go back to main staircase for third key and activate as above.

You can now explore the tree house complex and find the pickaxe, the door knocker and the crowbar.

Get the pigmy cow from near the manure heap and make your way to the well. Use the crowbar to open it. In the upside down world, give the pigmy cow to the Shopkeeper. He gives you a bean for it. Go past the well and jump up onto the house roof. In the chapel, get the fourth key.

Go to the manure heap and drop the bean. Take the door knocker back to the castle and use it on the door that says "Knock and Enter." Get the bucket, take it back to the pool of water near the volcano. Fill it with water and drop it on the manure heap. This makes the beanstalk grow. Climb up, jump right across the clouds and you find the Cloud Castle.

Get the Dragon's Egg. Jump back along the clouds and drop down to ground level. Activate the fourth key and drop down the hole beneath the Control Room. Drop the egg on the nest and the Dragon lets you pass. Use the pickaxe to get the heavy rug.

Go back to the Cloud Castle and drop the heavy rug on the spikes. You can now explore the Castle and rescue Daizy. If you haven't collected all 30 coins she asks you to do so to buy a house.

There! Simple, isn't it?

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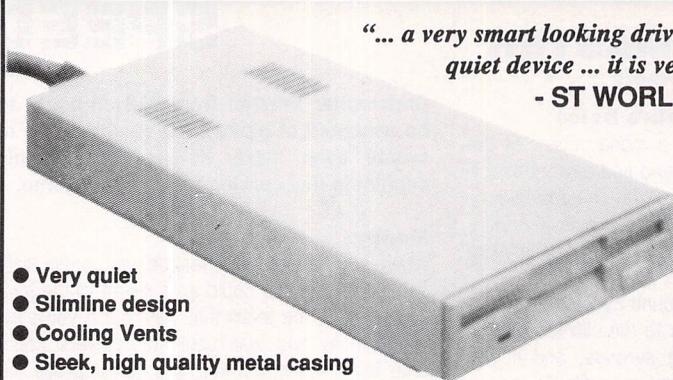
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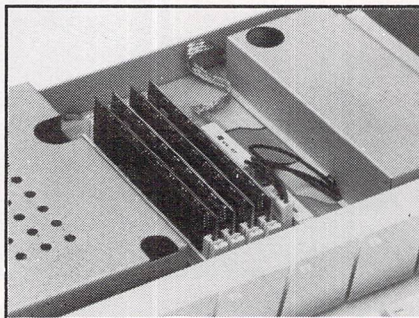
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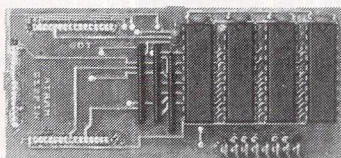
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Dumping the flexible way

Having problems with your screen dumps? Derek Clarke takes a look at the new and improved Flexidump Plus and spends a day dumping

PRINTING A PICTURE WITH FLEXIDUMP

1	Picture type	URN
P?1	DEGAS LOW RES	OK
P?2	DEGAS MED RES	OK
P?3	DEGAS HI RES	OK
NE0	NEOCHROME LO RES	OK
TN?	TINY	OK

1 Be sure you choose an appropriate printer driver – one that configures the program with your particular printer. Then use the PICTURE TYPE option to load *Degas Elite*, *Neochrome* or *Tiny* format pictures into *Flexidump Plus*

1 PASS	2 PASS	3 PASS
DENSITY 1	DENSITY 2	
DENSITY 3	DENSITY 4	
DENSITY 5	DENSITY 6	
DENSITY 7	00:00:00	
HEAVY	RANDOM	
SIDEWAYS	INVERT	

2 Load your picture into the program and then set the dump parameters to suit your taste. You can adjust the printer dot density and the number of passes made by the print head

Screen area select				
x1	x2	y1	y2	Frame
0 2 0	2 1 5	0 9 5	1 7 0	0 0
Width	1 9 6	Height	0 7 6	
HELP RESET OK CANCEL MANUAL				

3 Choose the DUMP option and select the area of your picture you want dumped, using either a "rubber box" or pixel coordinates. Or you can go for broke and dump the whole picture

Dump dimensions	
X axis in mm	Y axis in mm
1 6 0 . 0	0 0 6 2 . 0
X INTEGRITY	Y INTEGRITY
0 0 0 2 . 3 2 1	0 0 0 0 4 . 6 5 8
RATIO 1:1	

4 You can then set the number of dumps across the page along with the spacing of each dump. The dump's dimensions can also be redefined, with lengths of up to ten metres possible

Select output device			
?			
HELP	PRINTER	DISK	CANCEL

5 Adjust the colour sieve to suit your taste, then choose your disk drive or printer as the output for your dump

Flexidump Plus

MACHINE: ALL STs
PRICE: £37.95 COLOUR, £19.95 MONO
FROM: CARE/ZITASOFT
CONTACT: 0923 672102

Have you ever tried to print out a piece of your own artwork using a graphics package and been frustrated by what you can actually achieve? Up to now, the best your ST could offer is a poor rendition in mono-

chrome – even if you use a colour printer. At last, *Flexidump Plus* comes to the rescue, offering all the features you could possibly want to produce dazzling screen dumps – and best of all, in colour!

You get two single-sided disks for your money, containing three utilities and the graphic-dumping software. It also has an "on-line" manual. When you're trying something and get stuck, just select "Help" and the appropriate part of the manual is displayed – there's even a help feature on the exit alert box! Alternatively you can just read it all in one go.

The utility software enables you to grab screens and store them on disk as either *Degas* or *Neochrome* files. You can also produce a catalogue of your pictures by printing them. The package comes complete with printer drivers for the more popular types of printer, or you can configure drivers and tailor them to your own specific printer.

The graphic dumping program itself is smaller than 150K and you can easily transfer it to your Work Disk. There is an extensive range of options available to the user – you can dump *Degas*, *Neochrome* and *Tiny* pictures and even dump screens which are in a different resolution to the one you're currently using.

Once the picture has loaded, you can edit it using the graphic editing facilities built into the program. However, while these are okay for most purposes, you are likely to find them a bit limited. You can also tweak a number of different features in the package, like altering the printer dot densities and the number of times the printer head passes over the same line – three being the maximum.

A great deal of thought has gone into the colour dump features. You must tell *Flexidump* all the details about the type of printer ribbon you use, the number of colours, the type of paper feed and whether it is a single or multi-

strike ribbon. The program uses this information to set the colour ratios of the dump, and to make the best use of your printer.

Because of this, however, there's always room for error – so don't be surprised if a dump doesn't come out exactly the way you want it to. If so, you can overcome this by using a "colour sieve" to adjust the ink densities used by the printer. This enables you to compensate for older ribbons, and with practice you can obtain some quite high quality dumps.

You can send the output directly to a printer

or create a file containing all the printer commands. You can then print this out from the Desktop. The package also contains details on how you can create your own transfers in mono or colour, and explains how to iron the transfer onto a T-shirt.

Flexidump Plus is very easy to use after a little bit of practice, especially with the user-friendly on-line manual. However, it has limited picture file compatibility – it would be nice if it were capable of printing IMG files. Nevertheless, as it stands it offers a very flexible method of producing screen dumps which you can tailor to your own specifications. **stf**

FLEXI FEATURES

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- Up to three printer head passes
- Partial picture dumping
- Up to eight identical dumps across a page
- Adjustable dump dimensions
- A maximum dump length of ten metres
- Adjustable colour density
- Picture dump enhancement
- Inverted dumping
- Heavy print
- Random dot patterns
- Multiple picture dumps
- Sideways dumping
- Framed dumping
- Mono threshold limits
- Graphic editing

■ Want to try it first? A demo version of *Flexidump Plus* is available from many PD libraries – see our directory, page 129

FORMAT RATINGS

FLEXIDUMP PLUS

£37.95 Colour/ £19.95 Mono
 Zitasoft/0923 672102

Features	88%
What more could you ask for?	
Speed	78%
High density dumps can take a while, but the result is worth it in the end	
Ease of Use	81%
Requires some practice, but manual is helpful	
Results	94%
Excellent, user-friendly with some nifty features	
FORMAT VALUE	84%
A bit expensive for the novice but definitely worth it for the expert	

The Competition

You can get PD printer drivers from most good PD libraries (see our directory on page 129) but there are no other dumping programs to touch this

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• THURSDAY NIGHT LATE TIL 8.00PM



The Kandy Koloured tangerine flake streamlined Picture Show

MOVING



*Do cels reproduce? Is a sprite a soft-drink or a spirit? Gallery guide
Neil Jackson takes you through an extended three-page exhibition*

Things are a bit different this month. With animation being the flavour of the issue, KANDY couldn't let this opportunity go unnoticed, could it? Art's art, innit? So, to give you guys the lead, inspire you to greater heights and generally wobble your visual circuits, we've added an extra page to show you some professional ST artwork, plus tips from a man who makes his living drawing piccies.

Plus, there are still two fantastic reader submissions, one of which is a fully-blown cartoon animation. Timing or what? With this little lot to

show you the way, you'll be reaching for that art package before you can say Walt Disney!

And remember, you too could be an ST art master. Next time you're doodling around on your favourite art software, take a note of what you did to get those fantastic effects, those stunning shades or that pseudo post-impressionist aura. Bung it down on a bit of paper (you know, the stuff that artists used before STs were invented), and save about five or ten intermediate stages of your picture taking shape. Write your name and address on the disk

label and pop it in an envelope with your tips. Send it to KANDY, at the address below. Make sure you send us only a backup, since we can't return any of your disks (it's a bit like *Vision On*, really). There's a £25 prize each issue for the best submission – and remember, it's not just the quality of your piccy that counts, but how much information you include.

That address, then, in full... GALLERY, ST FORMAT, 30 Monmouth Street, Bath, Avon, BA1 2BW. And now, on with the show. Lights, camera, action... **stf**

"Beethoven" by Geoff Furlong from Bridgend, Mid Glamorgan

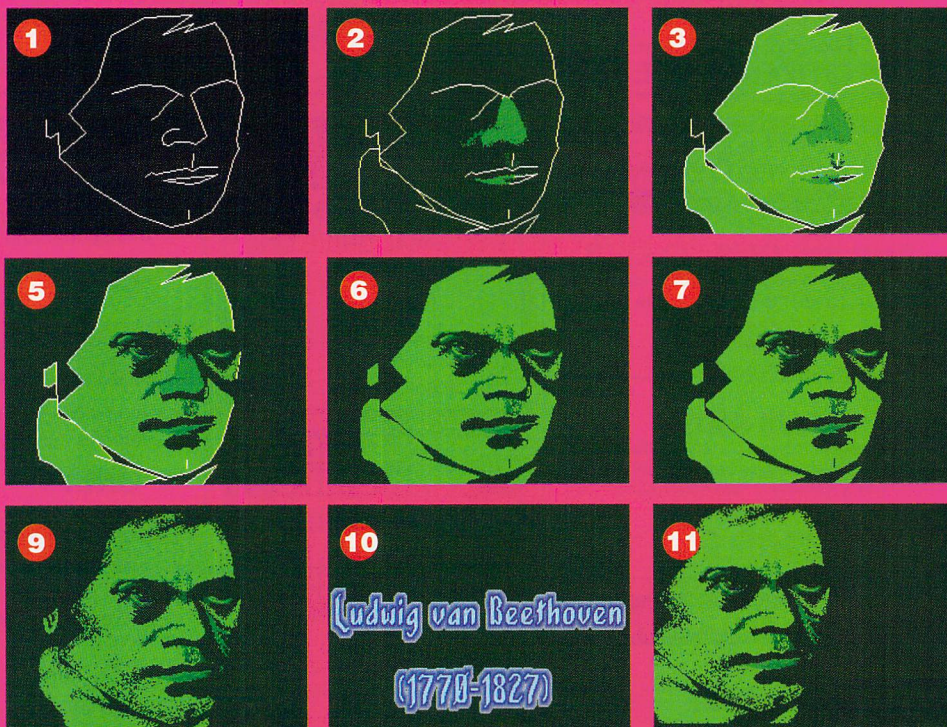
This month's first submission was created using two very popular art packages, *Cyber Paint*

£25
WINNER
STF PRIZE

(which is also a very capable animation studio) and old faithful, *Degas Elite*. This is very common, since no single art package for the ST has everything you're going to need – you can almost always get the best results by using a combination of programs. That's life! Tell 'em how you did it, Geoff...

"First step – *Cyber Paint*..."

1. Using line and connected line modes, I created a basic outline of the portrait. I like to use a range of tints rather than different colours – this gives a softer image, especially in a portrait.
2. The nose is the most vital 'landmark' in a portrait. It provides the centre of the work so that all the other features can be positioned with respect to it. Using a combination of fills and airbrush shading, I managed to add shape and shadow to the nose and mouth.
3. Next, I increased the shadow by gradually decreasing the darkness of the airbrush.
4. Then I increased and tidied up the shadow around the nose, and added indications of where I think the cheekbones and eyes are.
5. The nose's shadowed outline still needed tidying. Now that I've got the positions of the eyes and cheekbones right, I can add detail to them. Also, I've added increasing shadow to the mouth and the chin.
6. The white outline is removed by changing it to the same colour as the background. This is easier than physically filling in all the white with



another colour. The shadow on the right side of the face is merged into the background to give a silhouette effect and, using the airbrush with a spread of four, I gave the bridge of the nose more depth.

7. The right cheek's shadow is now tidied up and light is added to the left.

8. The 'hard' edges of the face left with the 'line' function are removed using the fine airbrush again. Now I've added stubble and wispy hair using the airbrush again but with a wider spread of nine. Extra shades of green are added to allow a more subtle blend from light to dark patches.

9. All hard lines and sharp angles are removed

with the airbrush and zoom. The ear is now smartened up.

"Then over to *Degas Elite*..."

10. I used *Degas* to create the text because it has a nice range of fonts. I thought a calligraphic font was apt. Using the other half of the palette, I created another range of colours – this time blues. After writing the text, I used the outline function to create a gradually fading border around the letter. This gives the text a 3D effect as if it's standing out of the screen.

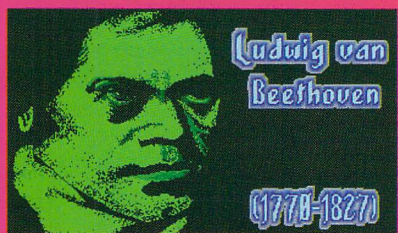
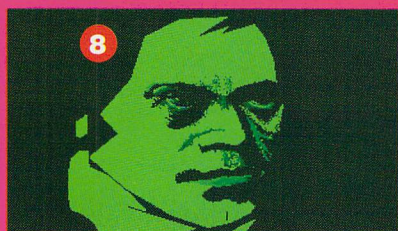
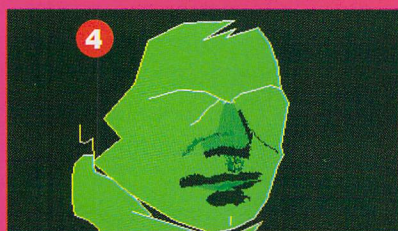
11. I copied this text into bank two and loaded the portrait into bank one. Now I put up a frame border and cut out the head for centring

Chasseur (Hunter) Animation, by Martial Fauteux, from Brossard, Canada.

This excellent piece of work is also the result of a combination of art packages. Sadly, the full effect of the motion cannot possibly be shown on a flat page. Instead, we've included a few static screens, plus some of the bits used as overlays for the basic background shot. Martial doesn't exactly give a great deal away in his documentation, but for more detailed info on creating your own animations, check out the Animator tutorial on page 32. Meanwhile, here are Martial's basic tips...

"Essentially, I made my animation using ZZ Rough (a fantastic drawing program from France) and Cyber Paint. I drew all the pictures in ZZ Rough, saved them, and then imported them into Cyber Paint. That's where I put them all together to form an animation sequence, which I then fine-tuned. The movement of my characters was inspired by the work of Preston Blair, a famous animator."

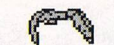
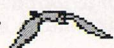
Overleaf – details of how Martial created his backgrounds – plus tips from Readysoft's own graphic artists on how you can make your own!



in the picture. I find that if the border and paper colours are the same, a frame border helps you to centre objects and text.
12. Now I switched to bank two and used the stretch facility to get the text the correct size to fit alongside Beethoven. After block copying the shrunken text to bank one, it just remained for me to remove the frame and voila! What's more, it only took me three hours!"

■ **Cyber Paint v2 £49.95 Electric Distribution** ☎ 0480 496666

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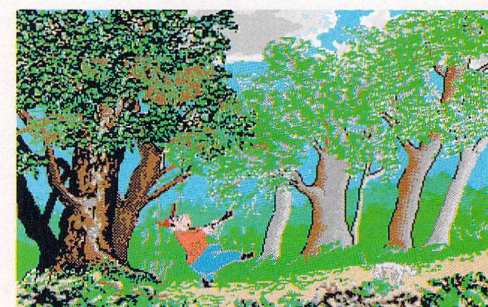
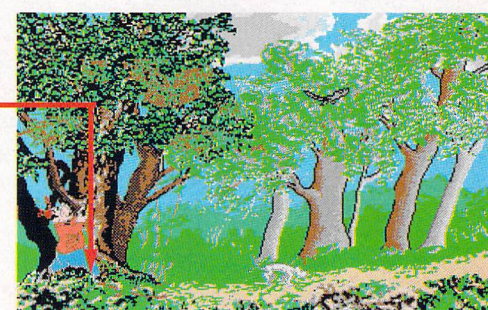
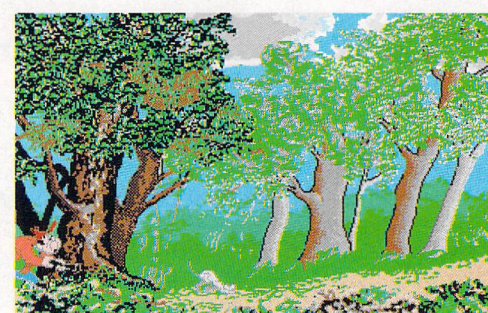
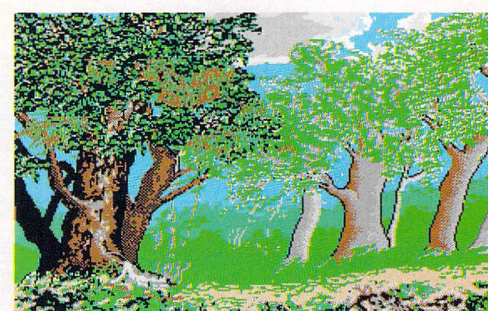
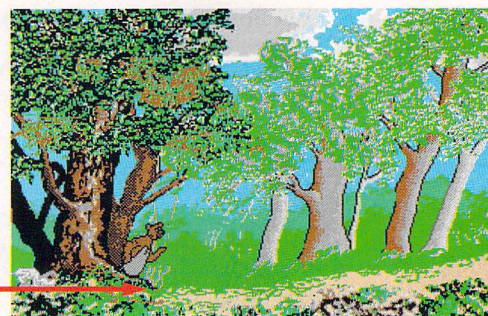
The bear peers out from behind the tree and disappears. He's simple to draw. The birds are even simpler, comprising just a few wavy lines



Leaping frogs liven up the background and they're a cinch to create



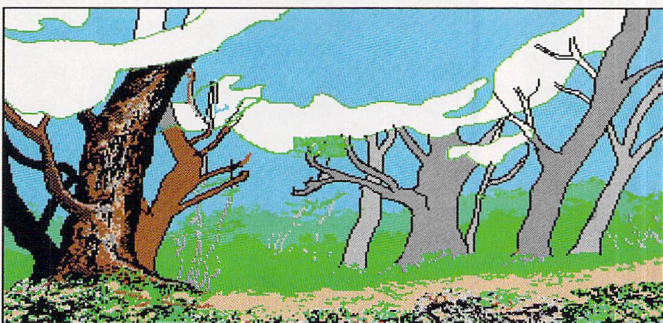
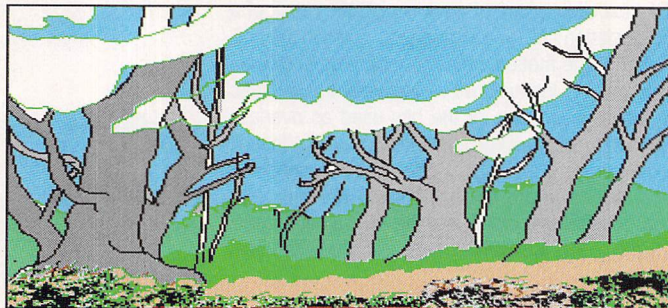
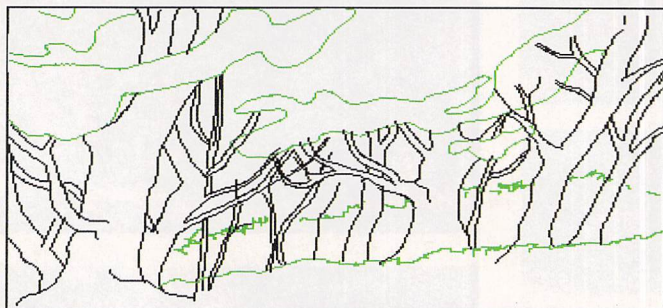
The man is the hardest to draw. Try and give him a good bouncing motion



► Here Martial shows how he constructed the backdrops for the animation. By starting off with a line drawing you can map out

the way the backdrop should look. Now fill in the details, being careful to introduce shading. Concentrate on building up strong

foreground objects like the trees to give the picture depth. Note how the grass is simplified as it trails into the horizon



READYSOFT PRESENT A VISUAL FEAST

And finally, KANDY presents some tips from the professionals. This sequence shows the creation of a background which is to be used in a forthcoming ReadySoft game currently going by the dubious working title of "Guy Spy." It's the work of Hugh D. Macleod Jnr, so here he is to explain its development...

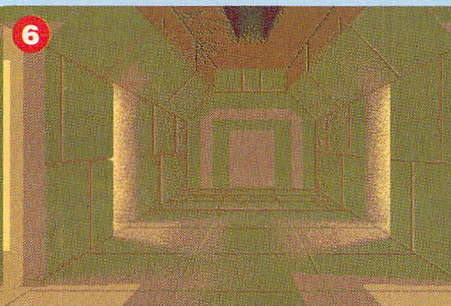
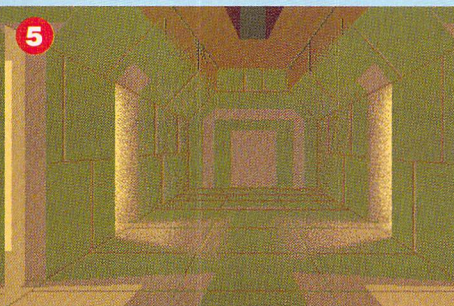
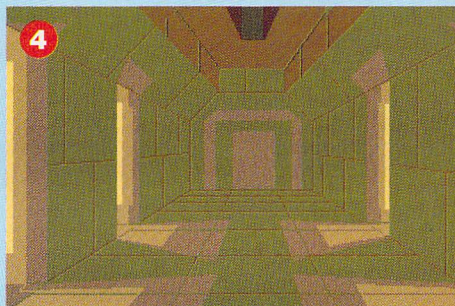
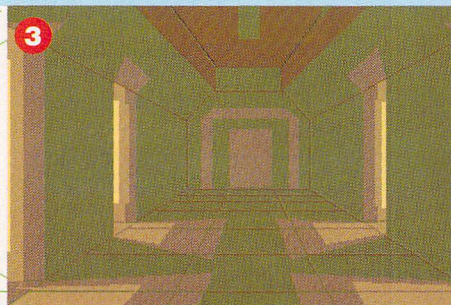
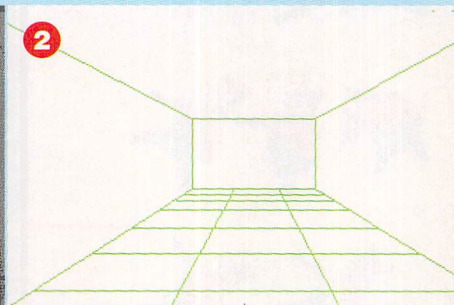
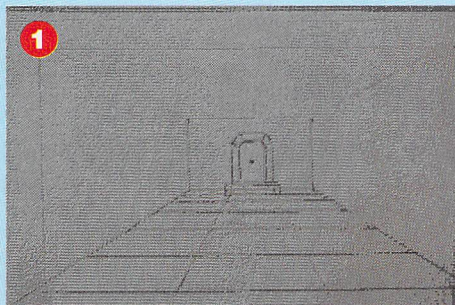
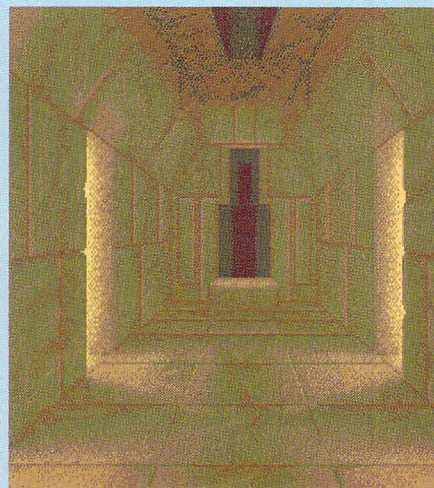
"The first consideration for this background is its central position on screen, because in the game it will have a central, straight-running animation overlaid on top. This *must* be taken into account before even putting pointer to pixel. Working closely with Rui, the programmer, I worked out the correct perspective points and sketched a guide. This was then digitised.

"Using *Deluxe Paint*, the digitised image is touched up to produce a clear reference screen, using the line function to mark out the

lines in colour. Then it's just a question of choosing the correct colours. The final scene is supposed to represent the inside of a pyramid, where there would be very little natural light. This means light to dark earth tones would be most appropriate – Ochre, Burnt Umber and Burnt Sienna, for example.

These colours are laid down in the appropriate areas and blended together to give the picture a good tonal transition. This is done using a number of functions – dithering, anti-aliasing and tinting. Areas where there ordinarily would be light sources are sectioned off and touched up separately.

The final touch (and the most important one) is to add the fine details, like the cracks in the rocks and the central pedestal, which are done freehand, using the draw function." **stf**



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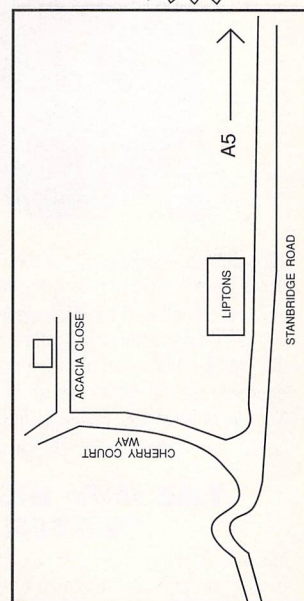
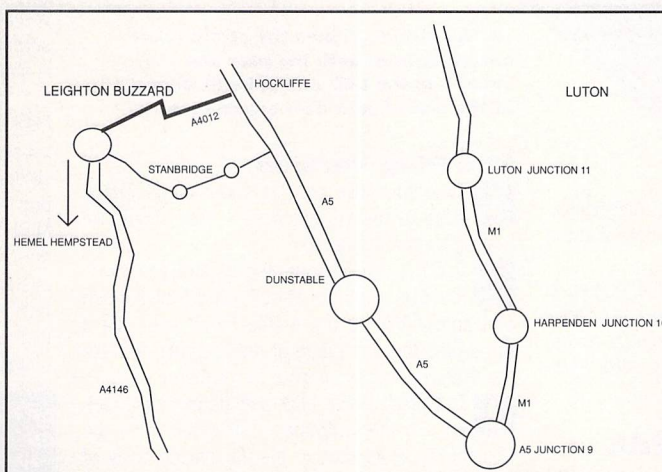
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DIY MIDI tester

Having problems finding that duff lead, especially in the spaghetti bowl of cables connecting your MIDI setup? Vic Lennard shows you how to make a MIDI signal and lead tester to ease the pain

You turn on your keyboard and find that the MIDI doesn't work for the umpteenth time – is there anything coming out of the MIDI Out or are your wires crossed? No matter how small your MIDI setup, it's a time-consuming problem always having to check your MIDI leads or MIDI Out socket. Maybe you've bought a cheapo lead and want to know whether it's working or not. This easy-to-make MIDI tester helps you find out what's wrong at a glance and without all that tedious fiddling about with your MIDI leads.

THE MIDI INTERFACE

The MIDI interface uses an opto-isolator – which is a Light Emitting Diode (LED) – and a phototransistor in one package. The LED turns on and off as MIDI data is received and the phototransistor picks up the

plug or socket, you can see this effect clearly. The LED in the opto-isolator needs a maximum of 5 milliamps to turn it on but there is little current available. You can however get a low current LED – requiring only 2 milliamps – for about 20 pence. You must also use a resistor in order to lower the voltage received from the MIDI line to around 3 volts. The standard value is 220 ohms but a value between 100 and 220 ohms is okay. If the resistor has too high a value, you end up with a dull LED. Use an eighth or quarter watt variety because otherwise it's difficult fitting it into the MIDI connector.

You can use a MIDI chassis socket and plug but you get better results with a line version because it's portable. The MIDI line plug and socket are around 28p each and the resistor only 3p – a total of around 50p for each tester.

Check out your local Maplin or equivalent for the parts.

■ The picture shows the strain relief cut away from both the plug and the socket so the LED can poke through at the end of your new signal testers

The Plug Version

1 Take the MIDI plug to pieces and check each of the pin numbers – they should be printed on the connector.

2 Cut the wire on one end of the resistor to leave a length of about quarter of an inch and solder this to pin 4 (the 5-volt line). It's a good idea to cut a piece of mains cable and use the outer casing to insulate this resistor.

3 Get hold of the LED and determine which leg is the cathode – it either has the shorter leg or is next to the flat on the body of the LED.

4 Place another piece of insulation over the anode and solder it to pin 5 (where the MIDI signal is received).

5 Trim the lead of the resistor and the anode of the LED so that they overlap by about a quarter of an inch.

6 Solder them together. Snip off the metal cable grip to prevent either of the components shorting to the casing and then re-assemble the plug, taking care to guide the LED through the hole at the back.

7 The small notch at the top of the MIDI plug must be uppermost when you plug your tester into a MIDI Out socket, as for any plug. Now you can gently bend the LED upwards so that you can see it.

8 Solder up the MIDI socket in exactly the same way. Then you can use this one to check MIDI leads.

Using the MIDI Signal Testers

Plug the MIDI plug tester into the MIDI Out socket of your keyboard. You may find it is flickering already without you even touching a note. This happens because some

keyboards send out a continuous stream of MIDI information called Active Sensing – it tells connected devices that "daddy is still here!"

Press a key and the LED should blip – this shows the keyboard sending the Note On signal. Now release the key and the LED blips again – this is the Note Off signal. Depending on how advanced your keyboard is, you can now check the pitch bend and modulation wheels, sustain pedal, program change buttons and so on.

Testing for faulty leads

Plug a suspect MIDI lead into the MIDI Out socket and then connect the socket version of the tester to the other end of the lead. Pressing keys and moving controls should make the LED flash on and off. If the lead is of poor quality or excessively long, you may find that the LED is not as bright as before because of the capacitance of the cable. You should always keep leads as short as possible.

Check that your testers work by using them on a known MIDI Out and a good MIDI lead. Now you can test your other leads or any new ones you buy. If pin 4 is shorted either to pin 5 or the screen, then the tester's LED stays off. If pin 5 is shorted to the screen, the LED remains on.

There is, however, a potential problem. The MIDI Out socket of the Atari ST is non-standard, so some MIDI lead manufacturers put a blob of solder between pins 1 and 4, and another between pins 3 and 5. This causes a permanent MIDI Thru loop on the Atari Out socket and yet doesn't show up in most other places in a MIDI system. The tester doesn't reveal this kind of fault – you are warned! And ST FORMAT can't be blamed if you bugger up this project and discharge 2,000 volts through your MIDI port! **stf**

■ Part numbers from Maplins Electronics, PO Box 3, Rayleigh, Essex SS6 8LR, ☎ 0702 554161 (Sales) or ☎ 0702 552911 (Enquiries):
5-pin plug: HH27E – 28p
5-pin socket: HH43 – 28p
220 ohm res: U220 – 3p
Red LED: UK48C – 20p

light pulses. As a result, there is no direct electronic connection between the MIDI data and the internal circuitry of the MIDI device.

Of course, this is pointless if the screen in the MIDI cable connects together two MIDI devices via the MIDI Out of one device to the MIDI In of another. To avoid this, the MIDI earth is not connected on any MIDI In socket.

THE MIDI SIGNAL TESTER

You can't see the LED in the opto-isolator turning on and off because it's part of a sealed unit. But if you connect an LED across a MIDI

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Write your own pop chart hit

*Session musician and composer Neil Palmer shares the tricks of the trade and reveals to **FORMAT**'s Neil West how you can produce the same professional results on your own ST, even with the most basic MIDI setup*

Neil Palmer – former keyboard player with “Halo James,” session musician for Kylie Minogue and former member of “Pride,” from which Sade rose to stardom – works from home. Not contracted to any particular record company, Neil earns his living sessioning and, more lucratively, writing for others.

His home setup enables him to write, play, produce and record music to a standard bettered only by the big, multi-million-pound studios. What makes this possible is a lot of state-of-the-art sound generating equipment, yards of MIDI cable, and at the heart of the operation, an Atari 1040ST with a MIDI sequencer software package costing over £470. The whole kit is worth almost £25,000 – but you can achieve the same professional results on your own music setup.

If you find yourself armed for pop-stardom with only a well-trendy haircut, a quick flick through this issue's special Buyer's Guide should provide ample information to get yourself started for less than £500. Don't panic – you've already spent most of the necessary dosh, since your ST can do a lot more than just play games, as regular *FORMAT* readers are well aware. The ST is in fact regarded as the industry standard pre-production music tool. Queen, Betty Boo, Soul II Soul, Tangerine Dream – the list of dedicated ST users includes some of today's most successful musicians. However, you also need a keyboard



■ Self-employed musicians like Neil Palmer live by writing songs for big-name stars. Find who needs material, write a song in their style, sell it and wait for the royalties to flood in. That's the principle, anyway...



■ The heart of Neil's music system is his ST's MIDI link to a Yamaha DX7 synth. The rest of the equipment is then linked together to create a setup bettered only by the multi-million-pound studios

(cheaper than you might think) and some sequencer software (your local PD library is more than up to the challenge – see our directory on page 129). There's just one more magic ingredient – a chart-topping song. This is where we can help. *FORMAT* can't promise you chart success, but we can offer some useful advice.

Starting with the tech-spec, what does Neil Palmer's own studio consist of? His sound generation hardware includes a Yamaha DX7 (used as the mother keyboard), a Roland D50 and a Roland MKS20 piano module. For effects and sound distortion he uses an Oberheim Xpanda, and for sampling he has an Akai S900 and S1000 (with an eight meg upgrade). All are linked using MIDI back to the ST.

"After you've got your kit and your ideas together," Neil says, "a useful bit of software driving your MIDI linked keyboards can cut the hassle of putting a song together down to a minimum, but it always takes time. I personally use the *Cubase* package from Evenlode [☎ 0993 898484]. Although it costs £475, I still feel it offers fantastic value for money. It's easy to use and has loads of fantastic features, and basically I use it as a computer tape-recorder. I can store, replay and alter music in real time or step-by-step, using the score-printing feature.

"Its main advantage is its flexibility. It allows an individual approach to computer-aided music

– once you've got to grips with all its impressive features, you can then tailor its abilities to complement your own. No two people will use it the same way. There are a lot of features useful to the beginner, such as the extensive quantizing capabilities, which I choose to bypass. On the other hand I'm sure that a lot of the shortcuts I use are ignored by other musicians.

"Unfortunately, there will always be problems. Firstly, MIDI takes time to work. The more

"The ST is regarded as the industry standard music tool for stars like Queen, Betty Boo, Soul II Soul, Tangerine Dream"

links you have in the serial MIDI chain, the longer the time delay will be. The only way out is to create an artificial parallel effect by splitting the MIDI chain into rings and then using the sequencer to hurry some of the slower signal up."

You don't necessarily need anything quite as elaborate – a budget keyboard and a good Public Domain software package (like *Accompanist* – the Henry Cosh sequencer, an exclusive special version of which was yours free on *FORMAT* Cover Disk 16) are enough to get you started. See this issue's special Buyer's Guide supplement for an overview of what's available.

Okay, You've got a great idea for a song in your head and you're about to start piecing it together. What tricks-of-the-trade are there to help you improve it?

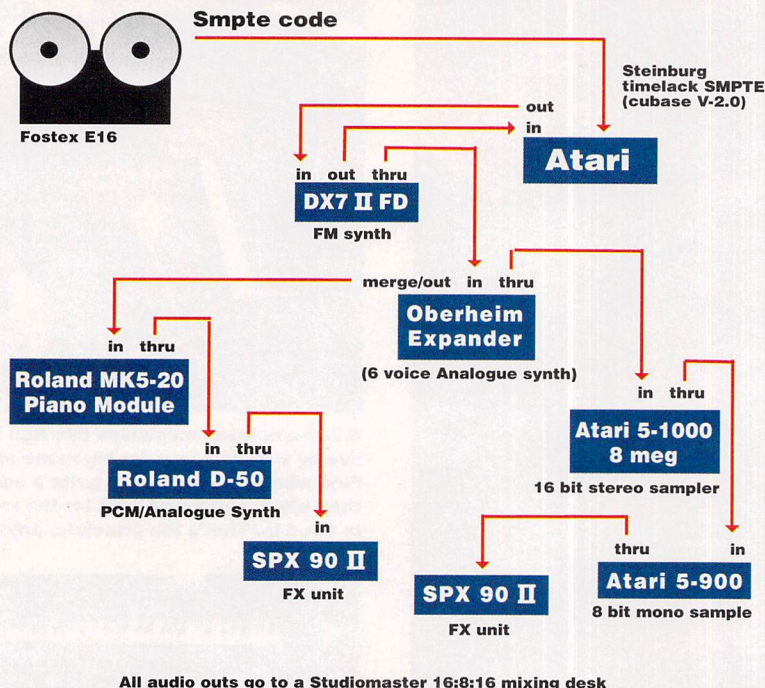
1. Modulating. A handy tool commonly used to provide a different angle on a recurring theme. It's actually transposing everything up or down a fifth. This can prove very effective when used during an instrumental break or fill.

2. Up a semi-tone! A very common trick – used by Stock Aitken Waterman to devastating effect. At the end of the song, usually in between the choruses that will be repeating to a fade, up the key a semitone and the chorus is fresh for a couple more repetitions. Remember "Nothing's gonna change my love for you" by Glenn Medeiros? It went up a semi-tone about four times. Listen out for this trick – you'll be amazed at how often it's used.

3. Major to minor. Another useful device is simply to change key from the major to minor (or vice versa). Switching to a minor key for 16 bars as a break can shed a whole new light on the piece, creating a more moody (even sinister!) atmosphere to the song as a whole.

4. Tempo change. Changing the pace of the piece is very useful, though not particularly

NEIL PALMER'S MUSIC SETUP



■ £24,000 worth of equipment, all linked by MIDI to the ST. A setup costing as little as £500 can achieve the same professional results, if you know a few tricks of the trade

recommended for dance tracks – everyone would fall over. Listen to a piece by Rush – they make full use of lots of tempo changes, utilising a wide range of time signatures and rhythms.

5. Structure and length. All chart-orientated material conforms more or less to a basic structure and is about three and a half minutes long. This strict time limit is largely because of radio airplay constraints and other practicalities. It's not uncommon to have a song speeded up or slowed down purely to make it hit the 210 second mark! Stick to this pattern and you can't go far wrong.

- Introduction (based on the melody of the chorus)
- Verse-Bridge-Chorus 1
- Verse-Bridge-Chorus 2
- Middle eight: instrumental, drum break, piano solo, etc.
- Chorus repeated to fade.

6. Harmony. The addition of an extra melody line, played a third, fifth or even octave apart from either the vocal-line or the main melody can add a lot of weight to the song – especially useful if the singer is a bit weak and needs support.

7. Counter-melodies. Quite tricky to write but very useful if you can do it. A common use is to start off with one melody line to the song, switch to the other halfway through and then finish with both running simultaneously. This helps create a climax to the song. It's become a common music-myth that Lennon and McCartney used to write melodies independently, then play them together at the studio only to find that they made perfect harmony, one fully complementing the other. Spooky.

8. Instrumentation changes. All this means is that you keep the parts of the song the same, but change (or even swap around!) the instruments that play them at some point in the song. Adds a bit of light relief to the overall sound.

9. Contrapunctals (!). You've all heard of these, even if the name sounds unfamiliar. Commonly known as a "round," a contrapunctal is a phrase of music repeated over and over, but staggered with itself – remember singing "London's burning" around a camp-fire? The effect created is of a complex series of counter-melodies, but is in fact the same phrase of music overlapping with itself. This principle can be applied to melody lines, bass lines, drum patterns – anything.

10. Melody. Often the melody line is the big problem. Finding the right melody to sit on top of your moody, hard or well-wicked backing track sometimes seems impossible. Remember that even the melody follows

rules. Find a nice phrase, then repeat the same rhythm but with different notes, then again. Before long, a melody should appear. *stf*

Keen to try it for yourself? Then get to it! Next issue *FORMAT* brings you a new piece of music composed exclusively for our Cover Disk by Neil Palmer himself, complete with all the MIDI files you need to play it back on your own equipment. What's more, we feature a step-by-step guide explaining in detail how the piece was written! It's all in the May issue of *ST FORMAT*, on sale Thursday 11 April. Don't miss it!



■ He's written songs for Sade and Halo James – now Neil Palmer writes for *ST FORMAT*! Don't miss next issue's Cover Disk exclusive!

TECHNOLOGY VS MUSIC? – THE PROS AND CONS OF SAMPLING

Musicians either love or loathe it with equal passion. Controversy continually surrounds the use of sampling technology. Although it's undeniably useful as a tool for the recreation of special effects, it's the wider implications that the purists claim are damaging to the music industry as a whole.

There are two main debates, one surrounding the use of sampled sounds. Is the use of samples gradually rendering "real" musicians redundant, to be replaced purely by the producers and keyboard players? Do drum machines threaten the livelihood of drummers? Depeche Mode took no drummer on their recent world tour. Listen to the charts – is that a real guitar you're hearing, or just a sample? It's becoming increasingly difficult to be sure... How do the actual musicians view the subject?

Neil Palmer's view is that "Everyone has suffered, except the DJs and the producers. However, most musicians adopt a middle-of-the-road standpoint. It is generally agreed that sampling a sound is okay. After all, until recently synthesizers were sold on the 'presets' packaged with them. Nowadays, you can hire the latest keyboard for about £30 a day, sample all the presets and use them on your existing machine. In fact, some sounds have become so widespread that it's become impossible to know where to draw the line. How often have we heard the 'pan pipe' sound used by Peter Gabriel to such good effect on the 'So' album?"

"Anyway, this isn't a new phenomenon. The advent of the synthesizer was supposedly the end of the 'real musician,' and that was years ago. No, at the end of the day the real, talented musicians will always be in demand. Everyone must learn to adapt."

HEARD THAT BEFORE?

The second main controversy is over the increasingly common practice of "lifting" from other people's music elements to use in your own. The law is shady on the subject, although saving time in the studio often results in time spent in court for those discovered lifting the work of another. Certainly, shame-faced falls following meteoric rises of Ben Johnson proportions are becoming more and more common.

Neill Palmer's view? "Yes, most people acknowledge that this is breaking the rules, and don't do it. Anything more than just a sound – vocals, chord sequences, recognisable riffs and so on – steps over the moral divide and is tacitly agreed off limits.

On the other side of the coin, if a musician does find a piece of his or her work sampled, then used on someone else's product, getting anything done about it is so much hassle that no-one really bothers. Besides, the music industry being as vain as it is, there's always the element of flattery, imitation being the sincerest form and so on...

"Also, if a musician feels he has to steal in order to be successful, then he can't have much self-respect or indeed talent. The best riffs, melodies and effects will always be those created by yourself."

JEAN-MICHEL JARRE

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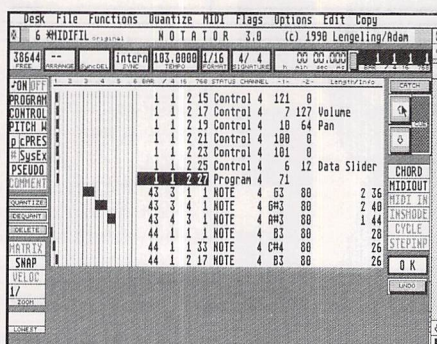
ABC music CREDIT CARDS 0372 468114

Maybe it's all to do with the popularity of Karaoke, or maybe it's simply that home entertainment is becoming more sophisticated. How else do you explain the rise of the pre-programmed music disk?

The concept is simple. You have a MIDI sequencer on your ST connected to a tone module. You purchase a disk with professionally programmed music on it, choose the tune you want, load it up and away it plays. The choice now available ranges from full-length Mozart piano concertos, through Glenn Miller and Elvis Presley to Michael Jackson and Madonna.

Why do it? Possibly to learn exactly how a professional arranger gets to grips with a song and gets the best out of the equipment – or maybe simply because there is something rather magical about having the music actually playing for real right in front of your ears.

It all started in America, where many performers now use sequences instead of backing tapes. Their arrangers probably figured they could make extra bucks selling them direct to the public as well. The idea spread to Europe, where, at last year's Frankfurt Music Fair, you could get not only songs but in some cases a tone module, sequencer, teaching program and pack of songs all bundled together. So far this



■ Hands On Software disks contain plenty of MIDI control data to set up your synth

concept hasn't been tried over here, but there are two companies busily making inroads into the market, from stylistically opposite ends.

THE CLASSICAL STYLE

Digital Music Archives have an expanding library of classical music including concertos and symphonies by Bach, Handel, Mozart and Beethoven. These have been lovingly assembled in the main by "classical/rock" musician Francis Monkman. The documentation that accompanies

the software is excellent. With each disk there is a full chart of the instrumentation, plus a full set of instructions for each work, including specific listings of tempo changes – for example where there is a pause on a chord – and also guidance on how to set up the sounds. You could go for a "literal" reproduction of the authentic orchestration or dream up your own futuristic version. There are also helpful hints on how to set up the sequencer and filter out or enhance various bits of MIDI data like dynamics and volume.

For music students this offers an invaluable insight into the nuts and bolts of the music – and with notation software you can print out the parts or the whole score. A performer could even rehearse, say, the solo part of a concerto,

"An invaluable insight into the music – and there's something magical about having it play for real"

using the ST to run the orchestral accompaniment. Difficult passages can be marked and accessed easily and the tempo adjusted for practice purposes, gradually speeding up as proficiency improves. This is an impossible task for a tape recorder but a very simple one for any sequencer. What's more, you can learn quite a lot about your synthesizer too as you alter the way it responds to the dynamic markings, try blending different sounds together, and in some cases completely re-order the sounds you use.

Digital Music Archives software is available for the ST in Creator/Notator, Cubase, Pro 24 and MIDI File formats. The last enables it to run on any sequencer that can read such files.

THE POPULAR STYLE

At the other end of the musical spectrum is "Hands On" Software. They offer over 60 titles covering popular music from Aswad and Vanilla Ice to Lionel Richie, Michael Jackson and even the complete New World Symphony. The software is set up ready for the Roland D-110/CM64 and CM32L modules, but of course you can configure it to run with your own equipment – and every disk has plenty of files to help you do so. The general help file explains exactly what MIDI controls the songs use – pan, pitch bend, volume – and explains in simple language how to adapt a song for your sound module.

The songs are either in standard MIDI File format 1 or Steinberg Pro 24 files which can load into Cubase. Each song has an information file giving you details of tempo and length in terms of time and bars. It also describes what instrument is playing on what channel and between what bar numbers – the latter is quite

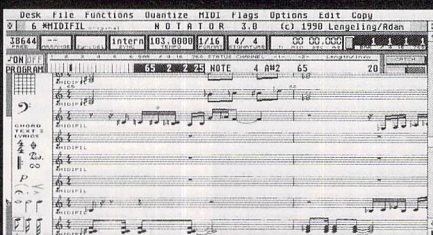
the ST jukebox

*If your instruments play themselves, don't panic!
It may not be poltergeists – it could be a whole new field of ST music software.
Our resident music expert
Jon Bates explains all*

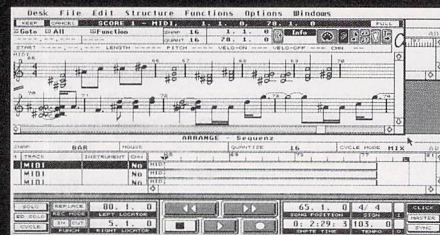


PLAY IT AGAIN, AL

Pre-programmed music disks from both Digital Music Archives and "Hands On" MIDI Software are available not just in specialised formats like Cubase and Pro 24 but also in MIDI File format. To demonstrate the versatility of this format, we loaded Bar 65 of Al Jarreau's "Moonlighting" onto five popular ST music packages. Each displayed the data in its own normal way, so you can scrutinise the piece in a familiar context.



■ Loaded from MIDI File format on Notator



■ The same bar, this time on Cubase

important because sometimes there is a program change number inserted that changes the sound on that channel, and it might be disastrous if you missed it. The overall construction of the song is also detailed, telling you where the verse, chorus and solo sections are located. A complete ASCII file of all the lyrics accompanies each song. Because of the wide stylistic range, you could use these as an educational aid or even take them out to gigs as a backing.

All the music files tested from both Digital Music Archives and Hands On were extremely accurate and faithful to the original, in terms of both harmony and voicing – great for anyone with an interest in either listening to or creating music. Other firms marketing pre-programmed disks include Geerdes, Passport and Midi-Hits. Roland also have a library, programmed by Hands On, which works directly with their Ten Tracks music system. Fancy setting up an ST Karaoke Society, anyone? **stf**

■ **Digital Music Archives:** £19.95 per title. ☎ 071 624 8774

■ **"Hands On" MIDI Software:** £19.95 per disk. Each disk contains either four chart hits or two classical pieces. ☎ 0705 452628

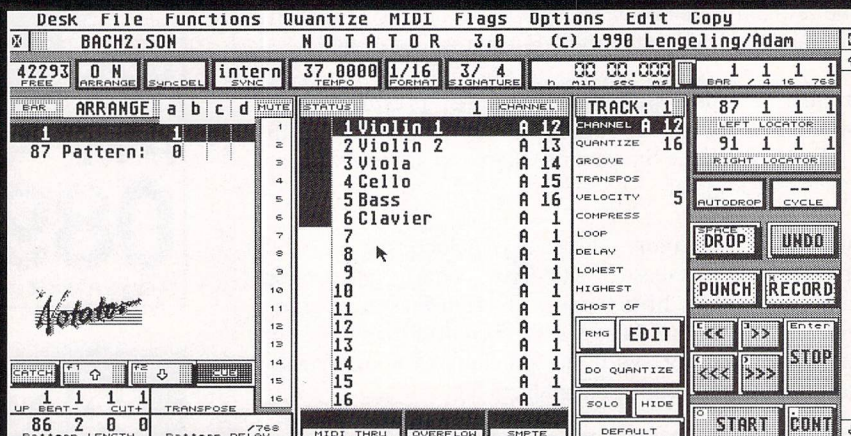
FROM A PIANOLA TO THE PROMS

The concept of instruments playing themselves in your home is nothing new. In the 1920s many homes had a Pianola or Player Piano. This was an ordinary piano equipped with a device that read a scroll of paper with holes punched in it. As the scroll wound through the player, the pattern of holes triggered the right notes at the right time, and sophisticated versions could reproduce the most exact detail of a tune's dynamics, use of pedals and tempo. On many Pianolas the power for rolling the paper and depressing the keys came from a pair of foot pedals which the user operated alternately; other versions had electric power. Recently many recordings have been made from piano rolls featuring famous soloists from the jazz and classical world, with quite astounding results. One recent promenade concert even had the Grieg Piano Concerto "played" by a pianist who had died in the 1960s; a life-size cardboard cut-out took the applause!

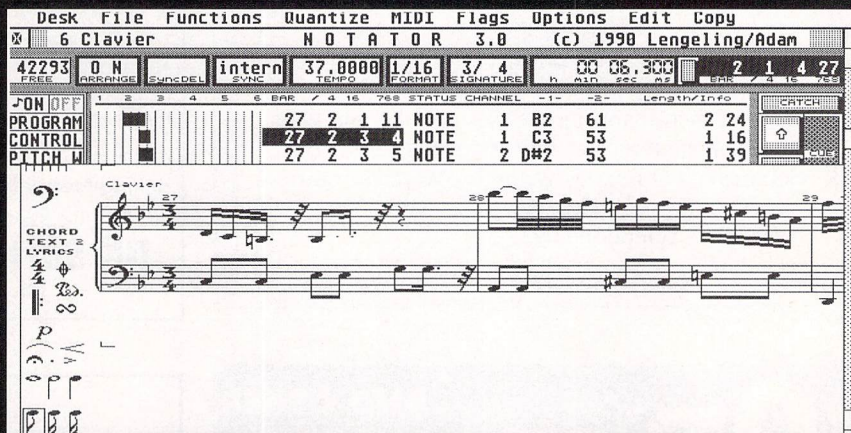
Yamaha have brought this concept right up to date with their Disklavier, which records all performance data onto floppy disk. The whole mechanism for recording and replay is housed in either an upright or grand acoustic piano and it uses optic fibres to transmit the data between the CPU and the keys. Yamaha too have a library of pre-programmed disks covering all tastes.

GETTING BACH INTO BYTES

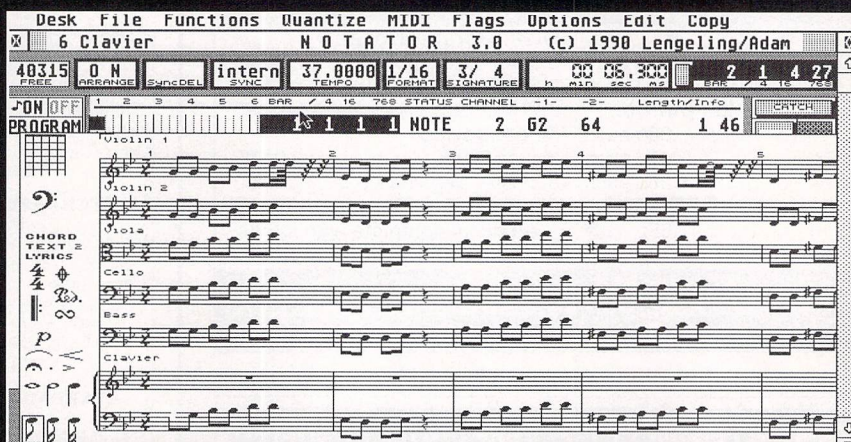
Because pre-programmed music disks include the full range of MIDI data on the pieces of music they contain, they enable you to investigate your favourite piece in detail.



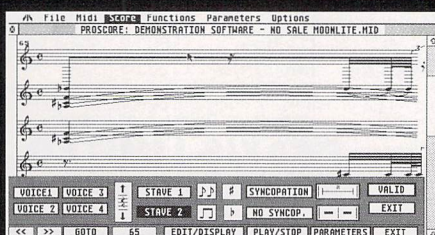
■ **Here's Bach's Keyboard Concerto loaded up on Notator and ready to roll**



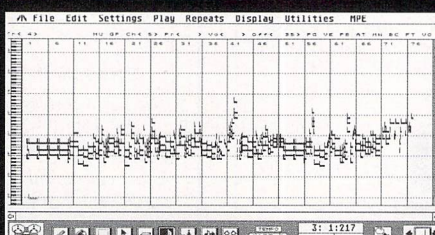
■ **You can select a detail – here, Bach's solo part – and examine it on its own**



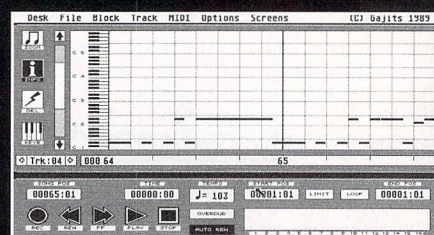
■ **The complete score – ol' JS would have loved to market his own disks!**



■ **The same again on ProScore**



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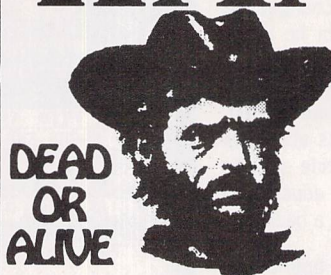
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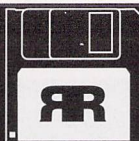
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Supersonic programming



Peter Molyneux and Glenn Corpes from the hit programming team Bullfrog discuss how to utilise assembly language in animation

Any serious programmer will tell you that the beauty of programming in assembly language is the sheer speed you can achieve. It's easy making your ST produce quality animation, but when you want to turn an animation sequence into a game you need to start reading the position of the joystick, respond to the player's movements and keep track of the enemies. To try and cram all these routines into a BASIC program and still keep it running up to speed would be a nightmare. Assembly language is so fast it's the ideal alternative.

Currently the most popular assembly language programming tool is Hisoft's *Devpac 2*, although they're working on a follow-up expected later in the year. *Devpac 2* provides a comprehensive editor and assembler which enables you to create and edit your own programs.

Assembly language programs correspond to your ST's machine-language so they are far more complex to write than BASIC programs (which are geared as much to the English language as possible). Next issue we begin a full tutorial on programming in assembly language, but for those already familiar with the fundamentals here's how Bullfrog go about constructing an animation sequence:

As in any programming language, the first stage is to design the sprites you need, using an art package. There are several common art packages which are suitable but Bullfrog tend to process their pre-drawn visuals with

the less-common *OCP Art Studio* from Rainbird. "The ideal way of organising sprites on the ST is to use *OCP Art Studio*," explains Glenn Corpes, "although it's horrible to actually draw with it." *OCP Art Studio* also has a special method of creating masks – more on these later – which makes it even more practical.

Of course, you can modify the output produced by other art packages just as easily. "The best art package on the ST is now *DPaint*," confesses Peter Molyneux. "Whatever art package you're using, the first step is to set up a grid of eight by eight pixels. If you use *DPaint*, turn on the exclusive brush option while in the menu and this enables you to pick up things with the brush.

"The next step is to make a checkerboard or grid in which to draw the sprites. Personally, I prefer the checkerboard approach, but I've seen graphic artists fight about which is the best method." Now go ahead and design your



■ Peter Molyneux and Glenn Corpes make up two sixths of hit programming team Bullfrog. Here they tell you a thing or two about how to program with *Devpac*

"The ideal way of organising sprites on the ST is to use OCP Art Studio"

sprites, keeping them within the boundaries of your grid.

It's vital at this point to understand the ST's screen format. Each individual pixel in a low-resolution screen is stored as four bits in four successive words (double-bytes). These are known as bit-planes, and since there are four you have 16 possible combinations (four bits times four planes) for each pixel – hence a palette of 16 colours.

The most efficient method of storing a sprite in memory (so you can access it for quick drawing) is to store each line of the sprite as four words for the first 16 pixels of the line, four words for the next 16 pixels and so on. This is why almost all sprite routines cater only for sprites which are a multiple of 16 pixels square – 16, 32, 48, 64 and so on.

If you don't own *OCP Art Studio* you must write a program to lift the lines of the sprites out of your *Neochrome* or *PI1* pictures – don't bother trying to read *PC1* or *IFF* files since these are in a compressed format. The *Neochrome* picture file is constructed of two wasted bytes followed by 32 bytes of palette data, 94 bytes of other data and then 32,000 bytes of screen information. The *Degas Elite* format is similar but not identical.

"This program could be written in assembler, C, BASIC or any language which enables you to read and write files," say the Bullfrogs. "We use a program which converts from all the ST formats to various other machine formats."

If you own *Art Studio*, this process is much simpler and you can actually save your sprite data in a useable format if you follow the process below:

● Left-click on the "set frames" (the flag);



SCREEN MEMORY

In low-resolution each pixel is stored as four bits, not consecutively (it couldn't be that easy) but as a single bit in four consecutive words. These are referred to as bit-planes, so there are four bit-planes for each pixel in low resolution, two in medium and just one in high resolution.

In low-res, the first word of screen memory makes up the first word of plane 0. The next word is the first word of plane 1. The next word again is the first word of plane 2, and the final word is the first word of plane 3.

The first bits of planes 0, 1, 2 and 3 are the first pixel. The second bits of planes 0, 1, 2 and 3 are the second pixel... This continues right up to the 16th bits of planes 0, 1, 2 and 3 which are the 16th pixel.

The next word is the second word of plane 0; the one after this is the second word of plane 1... and this is repeated for the remainder of the screen memory.

TECHNICAL WIZARDRY

You can enhance a straightforward animation sequence immeasurably by using various programming techniques. The first of these is scrolling. Set up a work screen – a screen which is separate to the main screen and constantly on display. Now copy your background to this hidden screen, lay your mask and sprite onto the background, then copy the lot to the main display screen to show it.

Vertical scrolling is the easiest to perform on the ST since a vertical scroll does not affect the bit planes used in the picture. But if you want to scroll the background left and right correctly, you must move in increments of 8 pixels to make sure the colours in the background are accurate. By scrolling the background on your work screen, copying the new sprite into the same position and showing this sprite on the main screen, you can produce the impression that the background is moving.

figure 1 – displaying a sprite

```

moveq #32-1,d1      loop counter for 32 lines
.loop
move.w (a0)+,(a1)+  first 16 pixels of plane 0
move.w (a0)+,(a1)+  first 16 pixels of plane 1
move.w (a0)+,(a1)+  first 16 pixels of plane 2
move.w (a0)+,(a1)+  first 16 pixels of plane 3
move.w (a0)+,(a1)+  next 16 pixels of plane 0
move.w (a0)+,(a1)+  next 16 pixels of plane 1
move.w (a0)+,(a1)+  next 16 pixels of plane 2
move.w (a0)+,(a1)+  next 16 pixels of plane 3
lea 160-16(a1),a1    move to next line
dbra d1,.loop
rts
_sprites incbin sprites.dat
                        include all the sprite data

```

- Left-click on the first sprite in the brush store;
- Right-click on the "set frames;"
- Right-click on the last sprite in the brush store
- Left-click on "control 1" (the meaningless blob in the bottom row);
- Enter 0 (on all lines);
- Right-click on "control 1" until it says "file output" – otherwise it tries to output your sprite through the serial port;
- Left-click on "control 2;"
- Set the plane to 15;
- Right-click on "control 2" until it says "Word Format" – otherwise it outputs a whole plane line at a time, which is meaningless on the ST;
- Save the brush store. Since all the settings you just set are saved in the .EDT file, you won't need to do it again;
- Right-click on "output" (the bottom-left icon) to output your file.

DRAWING THE SPRITE ON SCREEN

In this Devpac 2 example, the sprite is positioned in the top left of the screen:

```

lea    _sprites,a0    point an address register
                        at the source
move.l  screen,a1     point another one at the
                        screen

```

You need to find the memory address of the screen so use the Physbase internal command. In Figure One you can see how this is utilised to

display the sprite on screen. Notice how the four bit-planes are considered.

To move the sprite around the screen, add something to a1. Adding 160 moves you down a line; adding 8 moves you to the right by 16 pixels. To draw the next sprite, add the size of the sprite (32 x 16 = 512) to a0.

The problem with this piece of code is that as it stands you cannot overlay your sprite against a background. If you're using a 32 x 32 pixel sprite block, it's going to appear with a blank square around it. The solution to this problem is to use a mask.

THE PRINCIPLE OF MASKS

The most difficult area of programming animation to understand is the principle of masks. If you position any sprite directly onto the screen, the block containing the sprite affects the colours already there. To overlay the sprite properly against a background, you first need to create and position a mask which changes the screen colours in the same area as the sprite block. Now when you lay the sprite onto the

figure 2 – Making masks

```

move.w (a0)+,d4      read sprite block, plane 0
move.w (a0)+,d5      read sprite block, plane 1
move.w (a0)+,d6      read sprite block, plane 2
move.w (a0)+,d7      read sprite block, plane 3
move.w d4,d0          copy plane 0 to d0
or.w    d5,d0 OR      all the other planes together
or.w    d6,d0 in d0,  leaving a combination of
or.w    d7,d0          all 16 bits of sprite's 1st line
not.w   d0             invert to create the template
and.w   d0,(a1)        mask background
                        (bitplane 0)
or.w    d4,(a1)+       combine with the sprite
                        (bitplane 0)
and.w   d0,(a1)        mask background (plane 1)
or.w    d5,(a1)+       combine with the sprite
                        (plane 1)
and.w   d0,(a1)        mask background (plane 2)
or.w    d6,(a1)+       combine with the sprite
                        (plane 2)
and.w   d0,(a1)        mask background (plane 3)
or.w    d7,(a1)+       combine with the sprite
                        (plane 3)

```

Repeat this for the next 16 pixels and end the loop.

figure 3 – Masking with Art Studio

```

move.w (a0)+,d0      get the inverted template
and.w   d0,(a1)       mask the background
or.w    (a0)+,(a1)+   combine with the sprite
and.w   d0,(a1)       mask the background
or.w    (a0)+,(a1)+   combine with the sprite
and.w   d0,(a1)       mask the background
or.w    (a0)+,(a1)+   combine with the sprite
and.w   d0,(a1)       mask the background
or.w    (a0)+,(a1)+   combine with the sprite

```

screen, the colours of the mask change back again to the correct, original colour.

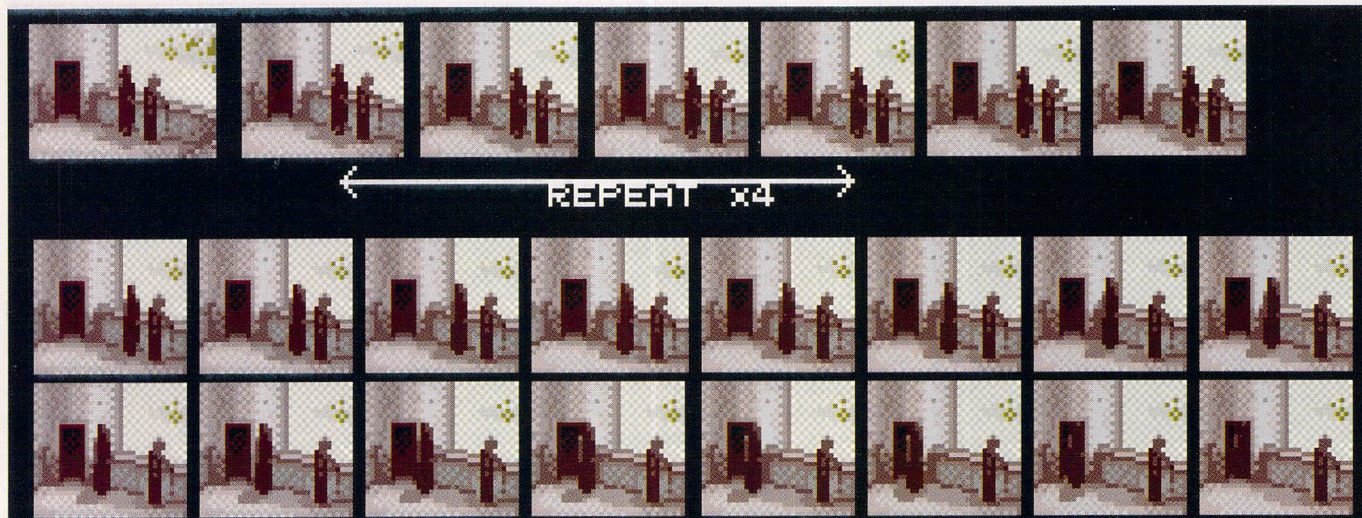
A mask is a block of data which has a bit set for every pixel that is blank on the sprite block. The mask can be "AND.W"ed with the background data before you "OR.W" your sprite data to draw it on the background.

You can calculate this when you draw your sprite by replacing the code in the loop in Figure One with the assembly code contained in Figure Two. Fortunately, Art Studio has the ability to output the inverted template with the sprite data – just enter 31 into the plane byte before you output the DAT file and then you can replace the code in Figure Two with that in Figure Three.

If you don't own Art Studio, add this feature to your conversion program. The problem with this, however, is that you cannot have pixels of your background colour in your sprites. In Art Studio you can draw in the background colour if you do all of your work in the brush store.

The real problem with this routine is that you can only move a sprite left or right by 16 pixels. To solve this you must shift the sprite with the processor. Have fun! Our routines for drawing 16 and 32 pixel-wide sprites with masking, shifting, clipping and variable height sprites are over 700 lines long! **stf**

■ Next issue, Peter Molyneux starts a 68000 programming series. To accompany this, we're giving away Hisoft's Devpac 1, complete, on next month's Cover Disk, as well as Peter's own programming routines. Not only can you start programming with one of the best assembly languages around, you can be taught by one of the ST's top programmers as well! To make sure of your copy, subscribe now! For details, see page 142. And for news of how you can save £25 on the upgraded version, Devpac 2, see page 150



■ These intro screens to *Powermonger* were designed by graphic artist Stewart Gilroy using *DPaint* on the ST. *DPaint*'s simple animation features enabled Stewart to test out the animations before Bullfrog built the frames into the game



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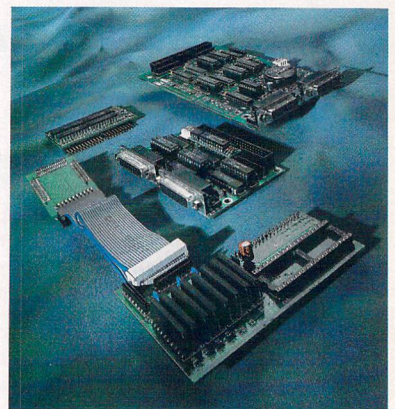
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- Plugs directly inside the ST
- Full fitting instructions included

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- Many more icons on the desktop
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POWER COMPUTING Ltd 44a Stanley Street Bedford MK41 7RW ENGLAND
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A tutor you can draw on

You don't need to cut off odd bits of your anatomy in pursuit of genius, or move into a garret to find your Muse. Sandra Vogel investigates a new art package that takes the sweat out of learning how to draw

Art Tutor

MACHINE: ALL STs

PRICE: £19.95

FROM: CASTLESOFT

CONTACT: 0743 723539

So, you spent 50 quid on an amazing art package, found you couldn't produce anything remotely like a passable piccy, and promptly got *Xenon 2* out again. Well, don't despair, for help is at hand. With a little patience, and Castlesoft's *Art Tutor*, you too could soon be exhibiting in the *FORMAT GALLERY*. You see, *Art Tutor* is not another of those many drawing programs. It actually teaches you how to draw.

There are three elements to this package. First, there is the manual. This looks more like a workbook than a guide to how to use the software – and a workbook is exactly what it is. Some chapters are about introductory generali-

ties like perspective, landscapes, colour and designing your picture. Others are about drawing specific kinds of things like animals, vehicles, plants, fantasy, cartoons, heads and human anatomy. Each chapter contains a short introduction to the topic and a number of exercises for you to get on with.

Then there's the second element, the program itself – three double-sided discs replicating the themes of the manual. The idea is that you use these as you work through the manual and watch everything you are reading about unfold before your very eyes.

Many of the pictures you see on screen are themselves part of a disk library and you can import them into your favourite art package to practise on. This is a great idea – you don't have to start practising from scratch with a blank screen before you.

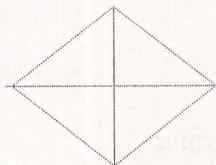
A blank piece of paper, however, you do need. The third element of the package is a pencil and paper (not supplied!). You need this to practise freehand drawing, to learn about perspective, composition, etc. The manual also suggests carrying pen and paper with you so you can practise drawing anything that takes your fancy. Be careful about asking people in the bus queue to pose for you, though!

One of the great things about *Art Tutor* is the number of ways in which you can use it. If you're a methodical beast, you can start at page 1 of the manual and work through to the

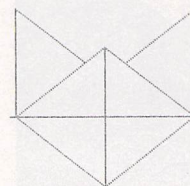


DRAWING A CAT'S HEAD WITH ART TUTOR – STEP BY STEP

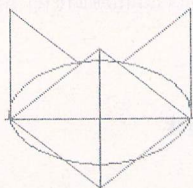
There's a huge variety of animals just waiting for you to draw them. Obviously, *Art Tutor* can't give you a step by step guide to them all. So what it does do is show you how to make a picture using combinations of simple shapes. The idea is that just about everything can be drawn in outline using a few easy-to-draw basic shapes – squares, circles, ovals, triangles, rectangles and such. You fill in the details later. (This is how professional animators work – see page 34.) Take the head of a humble cat...



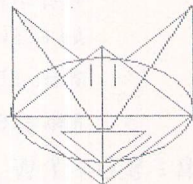
1 First, draw a box, standing on one edge, and divide it into four equal parts. This helps you get all the various parts of the cat's head into proportion



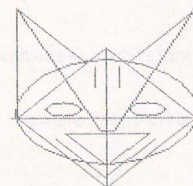
2 Next, add two triangles where the ears should finally end up. Try to think of the whole animal as being made up of simple geometrical shapes like this



3 Now you have to start thinking more carefully about the face. An oval with its centre slightly above the centre of your original box should take care of it



4 Okay, this is the difficult bit. Add more straight lines, to build up the shape of the head. Look at a real cat, or photographs, to see where it needs more



5 Ears, mouth, nose and chin are the obvious things. But where should you draw them, and are there any other parts of the feline physiognomy you should add?



6 Now you can remove all the guiding lines you drew earlier, to reveal a picture that is by now beginning to look reasonably like the head you're after



7 The head is still a bit square in some places, though, so you need to round off some of the rough edges and generally tidy things up a bit to get the outline right



8 Finally, using a thicker brush (or a pencil) you can work on bringing out all the features you want to emphasise, and voila! You have drawn a purrfect cat!

end, completing all the exercises along the way. If all you've ever wanted is to be able to draw a Ferrari or a deadly nightshade or a dragon, then you can zip to the relevant chapter and concentrate on that. If you are not exactly a complete beginner but want to improve in some areas, you can dip in and out of the package with ease.

Art Tutor teaches you to draw very simple objects using regular shapes. This is fun to play around with, but if you put the advice to use when drawing more detailed piccies or complex backgrounds, you realise it wasn't as helpful as you expected. Nevertheless, even a real splodge artist can learn something from it. **stf**

FORMAT RATINGS

**ART TUTOR/£19.95/CastleSoft/
0743 723539**

Features 71%

It's all there – but a better indexing system would give you more encouragement to dip in and out

Speed 68%

Quite slow to actually draw graphics on-screen – though this helps you follow what's happening

Ease of Use 84%

Documentation makes it easy – each screen has a number referring you to the exercise in the manual

Results 71%

Good if you're prepared to practise with it

FORMAT VALUE 73%

An ingenious package at a very reasonable price

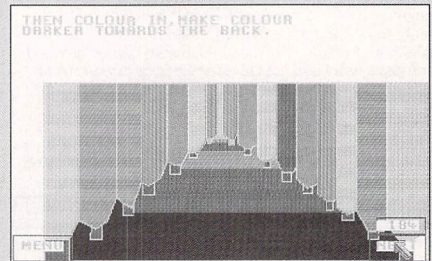
The Competition

There's nothing comparable – yet

PUTTING THINGS INTO PERSPECTIVE

A couple of the things you need to think about when you start drawing are colour and perspective. Art Tutor is full of help about these, though you need quite a lot of palette practice before you can make 16 colours look like four times as many!

In its easy-to-follow way, with the manual and disks working in tandem, the program explains the basic rules about warm and cold colours, and shows you step-by-step how colour, as well as size of objects, can help to create perspective. Work through its lessons methodically and you come across just about all the basics you'd be taught at an Art School.



■ This picture of the view into a wood is one of the helpful workscreens that explain how colour can add perspective

TEN TIPS ON USING ART TUTOR

1. The pad and pencil are as mighty as the pixel. It isn't only cartoons and film strips that need a storyboard – that is, a detailed breakdown of what you have in mind. In order to produce good computer art, you should get into the habit of planning your pics on paper.
2. Practise. This goes for both pen and paper and computer art. When did you ever get anything right first time?
3. Experiment. Especially important in this is importing pictures from the Art Tutor library, or using any other art you may have, and messing around with it. Play with perspective, dabble with design, customise colours – you never know what might happen!
4. Use all elements of the package together. The combination of manual, programme, art package, pencil and paper really works.

5. Once you start a topic from the manual, see it through to the end. You can learn a lot more this way, especially if you are a beginner.
6. Carry a sketch pad everywhere you go (well, almost). Make drawings of things you see. It takes practice and experience to develop an eye for a good picture.
7. Go to art galleries, get books out of the library, look at *FORMAT's GALLERY* pages. See how others approach things, and think about how you might do it better.
8. Never be afraid to start a drawing with a grid. This is a great help for getting perspective and proportion right, and you can rub the guide lines out afterwards.
9. Patience is a virtue. And even with a program as helpful as this, often a necessity.
10. Don't aim for perfection – enjoy yourself!



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Public Dominator - PD

What is Public Domain?

Public Domain software is simply software that is allowed to be copied freely, since the authors have decided to share their programs with all users, for this reason software can be grouped together on disks which are sold at an equal price depending on how many you buy, when you buy any of the disks on this page you may copy and give them to anyone! each disk has a code number which is denoted with this symbol - • - what follows the code number is a brief description of what is on the disk, all the programs are fully working and most come with documentation on the disk. We will also give as much support as is reasonable.

Abbreviations Used

CSR - Colour Screen Required. MMR - Monochrome Monitor.

1MB - 1MB RAM required. DSD - Double Sided Disk.

COMMUNICATIONS

- A153 - The ABK BBS pd comms disk.
- A43 - DSD. Citadel BBS.
- A44 - Star net BBS.
- A85 - Infinity BBS.
- A133 - DSD. Pandora a BBS system.
- A48 - Uniterm v2.0c.
- A166 - Vanterm v3.71.
- A119 - Flying Start v1.04 1200/75 comms program for Prestel.
- A51 - Comms programs: gas term, bmodem, solar term, terminal, my term, sterm, con..st, star term, term_c, jam term, gem term and xmodem term.
- A8 - Packet ham radio software.
- A118 - Worli mail box with packet-term v4.5st.
- A105 - Radio disk. Worli v2.5, yarp.
- A10 - Kermit kit.
- A35 - Compunet v3.01.
- A93 - Txt v2.0a teletext program.
- A176 - Starterm v1.11.

APPLICATION

- MP7 - Home Business Pack: DSD. Datahandler and First Base 2 databases, STSheet and Sheet 2 excellent spreadsheets that include graphics and Lotus 123 compatibility, STWriter Elite the excellent word processor and Double Sentry the accounts package.
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- A159 - Databases: Address book v1.21, Database, First base and Datahandler.
- A49 - STSheet spreadsheet.
- A72 - Personal finance.
- BPRO1 - CSR. Electronic Bank Statement accounts.
- A94 - Data handler v1.0 database. Context text editor. Magic Shadow archiver. Word Perfect Epson LQ800/850/1050/1500 printer driver.
- A96 - DSD. Sheet v2.0. spreadsheet.
- A108 - DSD. 1MB. B/Stat, sophisticated graph, stats analysis.
- A121 - Pools - Expert Results Predictor v2.5.
- W2 - STWriter Elite v3.6 word processor.
- W5 - Micro-emacs v3.925 text editor.
- MP21 - DSD. MMR. TeX the document processor and typesetting system. A 6 disk pack for £15.00
- A125 - DSD. 1MB. Opus v2.10 spreadsheet.
- A138 - Double Sentry v0.00 accounts.
- A165 - Network a simple network system.

FONT DISKS

- A25 - MMR. Font Master excellent document processor.
- A60 - Fonts for Font Master on A25.
- A13 - Publishing Partner disk 1. Six fonts: Hudson, Columbia, Devoll, Thames, Spokane and Saturn.
- A38 - Publishing Partner disk 2. Six fonts: Caligrify, Elegance, Courier, Roman Bookface, Westside and Avant Garde.
- A95 - Publishing Partner disk 3. Six fonts: Artist, Broadway, Letter Gothic, Oriental, Ultra Block and Wilkes-Barres.
- A127 - Publishing partner/ Pagestream disk 4: 1 PP font: Creative. 5 PS fonts: Futura, Hal, Hlvb, Lubalin and Script.
- A45 - Star ML10/LC10 font designer v1.1.
- A63 & •A64 - FontKit v3.31 an Epson, ST screen and Degas font editor.
- A110 - Calamus 9 fonts: Facade, Fura, Greeny2, Hebrewy, Manvilly, Math, Peignoy, Silicy and Steely.
- A187 - Calamus 13 fonts: Arc10, Arc25, Arc90, Data, Guady, Noten, Roman BTS, Script, Seg, Snuf, Stradiv, Studyit and Troman.
- A135 - GEM Font Master by J.Millar the GEM GDOS font editor.
- A137 - 40 GEM GDOS fonts.
- A192 - Signum Fonts 37 x 24 pin printer fonts.
- A193 - Signum Fonts 29 x 24 pin printer fonts.
- A194 - Signum Fonts 27 x 24 pin printer fonts.
- A195 - Signum Fonts 29 x 24 pin printer fonts.
- A196 - Signum Fonts 11 x 24 pin printer fonts.
- A197 - Signum Fonts 12 x 9 pin printer fonts.
- A175 - 79 GEM GDOS fonts.

EDUCATION

- BPRO10 - CSR. Classroom Maths for students age 7 to 12.
- G35 - MMR. Hypervoc and ST Dic 2 vocabulary trainers. Quiz simple multiple choice program, pauk very good quiz database.
- A47 - CSR. KIDsgaph, KIDsgrid2, KIDsmusic, KIDspiano, KIDsnates.
- A100 - CSR. KIDspotatoo, KIDabc, KIDsketch, KIDstory.
- A101 - CSR. KIDsong, Numerical go round, Number maze.
- G47 - CSR. The History File.
- A73 - DSD. Flashcards 1 + 2 spelling.
- A132 - KIDcolor, KIDshape and Dot to Dot.
- G76 - DSD. Treasure search.
- A177 - CSR. KIDshapes, KIDpuzzle.
- A178 - CSR. NOTSTE. Can you spell

NEW ST/STE USERS

•MP1: Starter Utility Pack: this pack was compiled with the new ST user in mind, to enable you to get just about all the utilities you may ever need, plus a wordprocessor, 2 databases and a graphic package. The pack includes: NEOMaster the excellent graphic package, STWriter Elite the brilliant wordprocessor, Firstbase and Datahandler the 2 databases plus the following utilities: ARC and ARCSHELL the brilliant file compressor, Private Eye the system info utility, IntaSect RAM disk, Printer Spooler, BIG colour emulator for monochrome monitor owners and Monochrome emulator for colour screen users, Virus Killer 2, picture converters, extended formatters to get more space on your floppy disks, time and date setters, clocks, RAM free, auto GEM for STFM owners who want to autoload GEM applications and loads of other utilities. All this is available only from Public Dominator for the special pack price of only £7.50!

UTILITY DISKS

- A15 - STSWitcher will split an ST's memory into 2 separate parts allowing you to use 2 programmes at once, autocopy - copies files into RAMdisk.
- A31 - IST Word printer driver files.
- A40 - Hard Disk 1: directory counter, GEMsoft a 40 folder fix, hard auto, backup, turtle backup v3.01 and unturtle restore v1.1.
- A52 - Hard Disk 2: folderxxx, an excellent directory lister, hard disk install, hard disk autoboot and other hd utilities.
- A172 - Hard Disk 3: the vault excellent hard disk backup program.
- A41 - Monochrome Emulator v5. CMFonts converts MAC fonts to ST GDOS format. deformator.
- A59 - Spell v2.3 spelling checker, Magic Shadow archiver - store, backup and create other disk formats including Atari ST, MSDOS and CPM.
- A88 - DCFormat v3.03 THE ST disk formatter. Meg a Minute Elite v2.1, 1MB a minute HD backup, Megamatic v1.195 - boot utility.
- A90 - Superboot v6.0 THE ST boot program. Screendump24 v2.0 Alt/Help screen dump to Epson LQ800 or compatible.
- A91 - File Selector v6.0 replacement GEM file selector. Virus Killer v2.01, Filespy v1.0 file display.
- A97 - MMR. Sticker III. THE disk label program.
- STW 41 - FSelect v3/1989 by Martin Patzell the excellent alternative file selector. ICone allows you to design icons and assign them to a file, so that each file can have its own icon picture. Acache will speed up file access.
- A109 - Quick Disk. Quickfind v1.5, Quickindex v1.5, QuickST v1.2, Quickview v1.3, Quickinf v1.3, Quicklabel v1.1, Quickprint.
- A111 - Headstart v1.1 GEM auto booter. JClock8d, Manual maker v2.0 requires GDOS, Print it! and View it! Printmaster utils.
- A120 - Copiers: copy beef, super copy, copy v2, copy track, disk copy, nibbler and others. acent.
- A128 - Recover, Bootinfo allows you to put any text on screen at boot up. FSCK v1.1 the file system checker and repairer. Dvorak keyboard changer. GEMlabel v3.0, RateHD a hard disk performance checker. Undelete will undelete file that have been deleted.
- A134 - Boot Drive Select allows you to select a drive to boot from when you reset your st. the formatter v1.21, graf tool, chart maker, bootb a drive b booter. GOACC allows you to select desktop accessories.
- A136 - The British Telecom Inland Call Calculator v1.02.
- A157 - Custom Formatter, Boot Sector Storage.
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- BPRO8 - Music Cassette Label Printer.
- A173 - ARC v6.02, ARC shell v1.98, LHarc v0.5b and v1.13. Turboarc, ARCit auto arcs and unarcs entire disks. Also unarc, unarcit and unzip.
- A174 - Dcopy v3.12. Bigscreen allows you to use GEM windows larger than the actual screen. Deckey how to plug in a dec keyboard. Filespy v1.2 file browser.
- A180 - MMR. DSD. Electrics disk contains lots of programs written in fast basic for students doing the bsc electronics course at Keele University.
- A181 - Interpret2 the ultimate printer controller. Printplus v1.1 prints IST Word documents.
- A182 - Expander expands a single sided disk to a double sided. MedRES STE a fix to the medium res bub on STEs. Turbo ST speeds up your ST.

- A186 - DocDisp the best document displayer on the ST includes the feature to load picture file and a non case sensitive search facility. FCopy 3.
- A188 - NOTSTE. CSR. Chemistry for all v2.0.
- A189 - CSR. Stitch X for designing any stitching patterns.
- A190 - Datastore v1.0 an excellent database. Toxic Formatter v2.0. Batch the CLI.
- A191 - Video Manager v4.0 allows you to catalogue your videos.

GAMES

- All games require a colour screen. We have got hundreds of excellent games disks which are detailed fully on our diskcat only £100!
- MP2 - Games Pack 1: DSD. Monopoly, Fruit Machine, Cribbage, Poker, Solitaire, Tunnel Vision, Reflex, Checkers, Devils Tomb, Death Star, Battle Ships, Zephyr and others. 3 disks for £7.50!
 - MP3 - Games Pack 2: DSD. Star Trek, Tennis, Patience, Fire Storm, Laser Chess, Mile Stone, Azarian, Barn Yard, Space Invaders, Space War, Lunar Lander, Bridge It!, Race Cars, Monkeys and Balloons, Spectral Sorcery and Give Us A Break. A 3 disk pack for £7.50!
 - G85 - Skate tribe. A very good skate board game.
 - G86 - DSD. Tennis excellent full graphics tennis game. also on disk are card games: patience and poker.
 - G93 - Jitterbug you move around a large area picking up things and killing things.
 - G95 - Chance a good shoot 'em up.
 - G96 - Mutant platform game.
 - G97 - DSD. 1MB. The Star Trek game.
 - G98 - Tracker shoot 'em up.
 - G99 - Haunted Monastery platform game.
 - G100 - Escape from the Tomb of RA platform game.
 - G101 - Overlander good shoot 'em up.
 - G102 - Key to Atlantis good shoot 'em up
 - G103 - DSD. Pop Eyed a 60's music trivia strip quiz.
 - G104 - Rorkes Drift zulus and the british army. nova an excellent galaxians type shoot 'em up.
 - G105 - Tile Games v2.0.
 - G106 - The Name Game.
 - G107 - Patience an excellent card playing game includes golf, little spider, calculation, tennis, raglans and elevens.
 - G108 - First Serve a tennis game.
 - G109 - Stumped the cricket game.
 - G110 - Yahzee the dice game.
 - G111 - Stocks and Bonds a stock market simulation.
 - G112 - Upstart a shoot the cherries up arcade game!
 - G113 - Spaceballer an platform excellent game.
 - G114 - The Rush is an excellent platform game.
 - G115 - Bumper Jacky a great platform game.
 - G116 - Zoltar a massive shoot 'em up.
 - G117 - Flight Simulator.
 - G118 - England Team Manager football game.
 - G119 - NOTSTE. Bunny hunt.
 - G120 - DSD. League Soccer football game.
 - G121 - Top of the Pops record company simulation.
 - G122 - NOTSTE. Heads and Hammers.
 - G123 - Fuzzball and Bounce out 2 platform games.
 - G124 - Motor cycle a good arcade type motorcycle game.
 - G129 - Snakes and Ladders the game.
 - G130 - MMR. DSD. Strabble an excellent version of the board game scrabble.
 - G131 - Anagrams, you enter a word and it will show all the possible anagrams.
 - G132 - DSD. Ditch Day Drifter a text adventure.
 - G133 - MMR. Risky Construction Set v1.5, you create a fictious 'world' and have wars etc.

BUDGIE UK GAMES

These games are licenseware, for each one sold Public Dominator gives 50p to the author. All these games work on all ST/STEs and require a colour screen.

- B1 - Damonoid a good space game.
- B2 - Football 88 league simulation.
- B3 - Blitz II action shoot 'em up.
- B4 - Othello reversi board game.
- B5 - Pro Darts 501 down.
- B6 - DR Boris defuse the TNT bombs before they destroy you!
- B7 - Bail Zone the breakout game.
- B10 - Moneyspinner the slot machine.
- B11 - Maelstrom vertical scroll shoot 'em up..
- B12 - Ace invaders a master implementation of Space Invaders.
- B13 - Zenith arcade space battle.

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- B19 - Tri Heli a mega must have faste game.
- B22 - Bandit the one armed bandit.
- B23 - Space Blob excellent platform game.
- B24 - Slippery Sid great maze game.
- B27 - Psicotit if it moves shoot it! Mega space game.
- B30 - A quest for galaxia a master implementation of Galaxians.
- B34 - Safe as houses monopoly game.
- B35 - Hostile reception Xenon type shoot 'em up.
- B40 - Dizzy Lizzy across between Pacman and boulderdash.
- B41 - Exodus superb graphics arcade game.
- B48 - XWPuzzle.
- B50 - Space Invaders and Detonator.
- B52 - IMB. Douglas Rockmoor the greatest ever impletation of Boulderdash ever! Brilliant!
- B53 - MMR. From Little Acorns.
- B56 - Super League Soccer.

GRAPHICS

MP4 - Graphics Pack 1: DSD. CSR. ANI ST the excellent animation package, fully working allows you to create your own animations! Pearle the ray tracing package with full examples, Mini Paint the excellent fully featured painting package, NEOchrome the excellent painting program, and picture converters. A 3 disk pack for £7.50!

MP5 - Graphics Pack 2: DSD. CSR. Master Painter the excellent fully featured paint package that includes multiply screens, Colour Burst II the 800/3200 shades on screen at once paint package, Fine Line the drawing program, Fractal Zoom the most comprehensive fractal generator on the ST, the Atari IImage Processor (IMB), MegaBlit the paint package, Studio and VanGogo 2 excellent paint packages. A 3 disk pack for £7.50!

•GR1 - CSR. NEOchrome Master v2.1 excellent graphic package.

•GR6 - Degas disk - 155 fills, 10 brushes, 7 fonts, printer driver files.

•GR7 - DSD. IMB. AIM v2.31 of the Atari IImage processor gem based.

•GR14 - MMR. Public Painter v0.1.

•GR15 - DSD. IMB. MMR. JIL2D CAD drafting program.

•GR17 - Picture Convertors, print master/ degas converter, neo/ degas/tiny/iff /spec512 to neo/degas/iff converter, img/aim converter img/aim to postscript, mac gif stripper, spectrum 512 .spc/spu to gif converter and spectrum 512 spc, sps and spu slide show.

•GR18 - MMR. Eplan an electrical circuit cad program.

•GR19 - DSD. Fractal Zoom v3.1 the most comprehensive fractal generation program available.

•GR20 - IMG utilities. 1. convert2img v0.9 converts any degas format, tiny, neochrome, macpaint, spectrum compressed and uncompressed to a monochrome .img format. 2. img quick view .img file viewer. 3. the .img slide shov1.1.

•GR21 - ANI ST the fully featured animation package.

•GR24 - CSR. Pearle the 3-D ray tracing package.

PROGRAMMING LANGUAGES

•L1 - 68000 Assembler, Xlisp, STLogo, Tiny basic.

•L2 - STBasic.

•L3 - Advsys adventure writer language.

•L4 - Forth83 programming language.

•L5 - PDC v2.0 compiler.

•L6 - Toy Prolog.

•L7 - Xlisp v1.7.

•L8 - Forth from bradley firmware.

•L9 - ST Icon v6.3, based on Snobol4.

•L10 - Little Smalltalk.

•L12 - C make. This is so like the unix make that you should read the unix documentation.

•L13 and •L14 Modula-2 development system v1.0.

•L15 - DSD. Sozobon c compiler.

•L17 - DSD. AGT v1.19 the adventure writer.

MUSIC DISKS

•M9 - Music Writer lets you create music on screen.

•M15 - The Accompanist MIDI 16 voice sequencer by Henry Cosh.

•M18 - DSD. Soundtracker player and Soundtracker modules converted from the Amiga.

•M19 - DSD. Soundtracker player and Soundtracker modules converted from the Amiga.

•M20 - DSD. Soundtracker player and Soundtracker modules converted from the Amiga. also documentation and some source code in 68000 and gfa basic on soundtracker formats and different frequencies.

•M21 - DSD. Noizetracker.

•M22 - DSD. Quartet samples disk 1.

•M23 - DSD. Quartet samples disk 2.

WORD PROCESSING UTILS

•W1 - CSR. Type It! The brilliant touch type tutor.

•W4 - Proff v1.0 very powerfull text formator.

•W9 - Newsletter maker - allows you to make a GEM disk magazine.

•W11 - Postscript disk. PS prints 1ST Word document in postscript format. 1stw2ps as above but including 1st word plus graphics very flexible. snapshot - outputs hires screen to ps printer, choice of size, angle etc. and examples of postscript source code and utilities to control printer.

DEMO DISKS

All demos require a colour screen.

•D122 - DSD. CSR. NOTSTE. The Union demo!

•D123 - DSD. CSR. IMB. The Amazing Snowman demo.

•D125 - DSD. CSR. NOTSTE. The Carebears Cuddly demons.

•D128 - DSD. CSR. The Wattaheck demo.

•D129 - DSD. CSR. The Swedish demo including sync and the carebears.

•D149 & •D150 - CSR. DSD. IMB. NOTSTE. Delerious demo from the alliance.

•BD1 - CSR. DSD. Mind Bomb the latest mega mega must have demo.

•D158, •D159, •D160 - CSR. DSD. NOTSTE. Batman the movie demo. Excellent 3 disk full colour digitised demo of the film.

•D162 - CSR. DSD. The lord of the disks 'Dragons lair' demo, excellent!

•D176 - CSR. DSD. The Care Bears 'So what demo', excellent!

•D191 - CSR. DSD. Mini Run!

•D197 - CSR. DSD. Space Ace by Don Bluth. Amazing graphic animation demo of the game.

•D202 - DSD. CSR. NOTSTE. Predator demo by The Islander. Excellent images from the whole of the film 'the predator'.

•D207 - CSR. Snowman demo the 1/2MB RAM version. Excellent!

•D210 - CSR. IMB. DSD. The Star Wars Walker I demo excellent.

•D213 - CSR. IMB. DSD. The Star Wars Walker II demo.

•D221 & •D222 - DSD. CSR. NOTSTE. IMB. Dragons Lair demo by IRS animated scenes from the game Dragons Lair.

•D236 - DSD. CSR. Inner Circle Decade demo.

•D237 - DSD. CSR. Stealth bomber animation and preview of Vertical Reality 3d.

•D240 - DSD. CSR. Star Trek The Enterprises leaves dry dock demo, also 2 excellent animations of the Reliant flying through space.

•D243 - CSR. Trans Beauce party demo.

•D244 - CSR. DSD. Phalanx overdrive demo.

•D247 - CSR. The Lost Boys Life's a Bitch demo.

•D249 - CSR. DSD. Animations: the juggling clown, lock on fighter, marilyn monroe talking, micromag, sunglasses and trucking.

•D250 - CSR. DSD. IMB. Animations: the barbers shop, walking foreman, channel 4 logo and unicycle.

STE DEMOS

These demos will only work on an Atari STE

•D144 - CSR. The Official Atari France demo!

•D214 - CSR. Sound OFF.

•D228 - CSR. IMB. AN COOL from The Care Bears demo.

•D229 - CSR. IMB. The Jungle demo!

•D230 - CSR. Movie shows off the stereo sound and the blitter chip.

•D231 - CSR. IMB. BOING a bouncing ball with colours scrolling through it and the sounds of Axel-F

•D232 - CSR. IMB. Fantasia, sounds of The Cure and excellent graphics, press the HELP key for instructions.

•D233 - CSR. IMB. 3D Scroller, sounds of The Cure and very colourful scrolling message, actually scrolls from the bottom of the screen to the middle then straight up and out of the top! With bouncing bobs and all!

•D234 - CSR. IMB. Psychedelik House II By The Overlander.

Aciiid!

•D251 - The Black Cats STE demo excellent!

•D252 - The 2nd French STE demo brilliant!

Clip Art

The following 4 packs of clip art are disks that are filled with black and white images that would be suitable with all graphic and desktop publishing packages.

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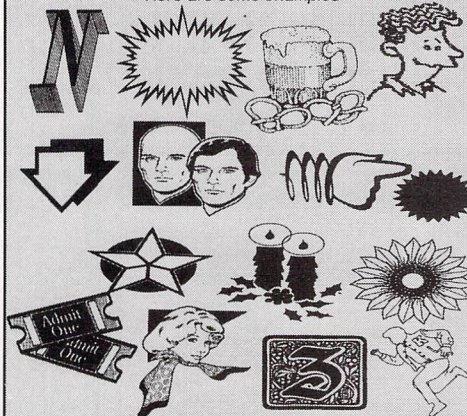
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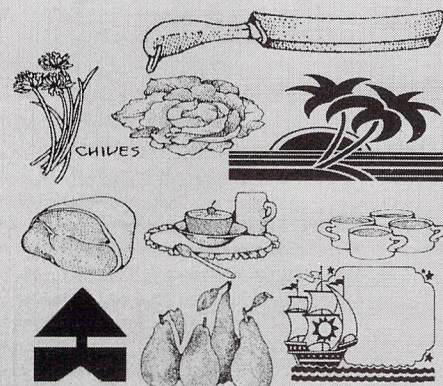
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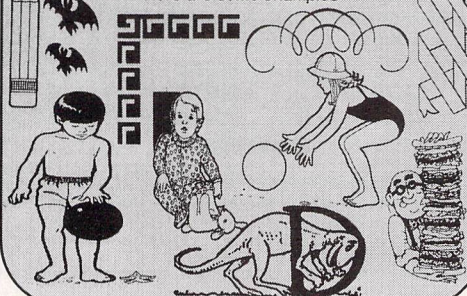


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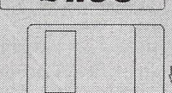
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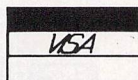
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**MEDIA
DIRECT**

THE COMPANY THAT PUTS THE CUSTOMER FIRST

A game is born 3

There's more to producing a game than writing it – the publishers have their work cut out for them too. In the third part of our series, Ed Ricketts talks to publishers Millennium about their role in the creation process

While Paul Carruthers experiences the joys and frustrations of writing *Stormball*, his publishers, Millennium, don't just sit around and wait for him to finish. They've got a lot of preparation and organisation to do: the initial ideas, the early demos, right through to the finished product and its marketing – things a programmer knows nothing about. How does a publisher interact with and influence a programmer? For part three of our series, *ST FORMAT* visits Millennium in Cambridge, city of a thousand cyclists, to speak to Ian Saunter, Millennium's Public Relations officer, and Michael Hayward, their Managing Director.

STF: What kind of things do you look for before you're willing to develop a game?

Ian: Out of all the mish-mash that comes our way from various sources, occasionally something appears that appeals to us. I also think you have to bear in mind certain factors: is the market already saturated with this style of game for example? As small publishers, we like to think that we're making our name with an original product – if a game is original, and we have faith in the programmers, then we give it a go.

Another major factor is our release schedule. We have to plan games for release anything between 12 and 18 months ahead of time, so we won't consider launching two similar styles of game side by side.

"I don't think publishers are in the business of cheating programmers – it's simply not in their best interest"

STF: So when do you decide to do a particular game?

Ian: The most common source for a future game is a programming team who have just finished a project – they're often looking around for new work.

STF: How can you tell if a game is going to be any good?

Michael: Well, you're not quite sure how a game is going to turn out, so you have to trust the programmer. Of course, when we see the things we visualised earlier actually happening in the game – when we can play it – then we get a different perspective. We can say, look, this is really good, but how about doing this?

We let people who've worked with us before fulfil their side of the project, so long as it's not going in the wrong direction. If you try to knock a programmer into doing exactly what you want,



■ **Michael Hayward, Managing Director of software publishers Millennium: "We think *Stormball* is going to be a strong seller"**

I think you lose the important creative element. You shouldn't interfere until it gets to a stage where you can actually see the whole program. With a team that hasn't worked with us before, we spend a lot more time writing down exactly what we want to see from the game – in effect storyboarding it.

STF: When is the deadline for finishing *Stormball*?

Ian: Paul started work on *Stormball* after he finished *Resolution 101*. He had two or three different things that he could have worked on next – we selected *Stormball* because we reckoned that a lot of the technology Paul needed for a 3D sports game was pretty much done. We'd been thinking for a long time about using his 3D engine for a playing area in a sports game, and

Stormball looked like something he could do reasonably quickly – I think he started coding the game at the beginning of September.

STF: Who creates the box and advertising artwork and how is it organised?

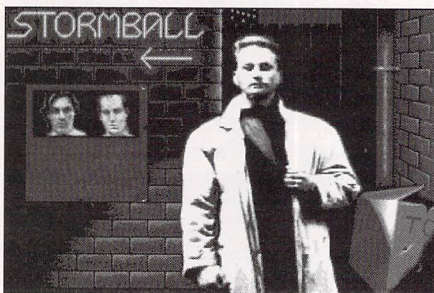
Ian: We start thinking about the design work four months ahead of the release date. The first thing to consider is what the illustration is going to look like. We use a designer who designs all of our boxes. We show him the product in certain stages and discuss it with him, and he goes off and does a pencil rough of what he thinks the layout might be. He then commissions an illustrator to do a painting – Mark Nightingale in the case of *Stormball* – and this forms the core of all the materials associated with the product: the box, the advert, the posters and so on.

STF: How do you budget the cost of a game – the advertising for example?

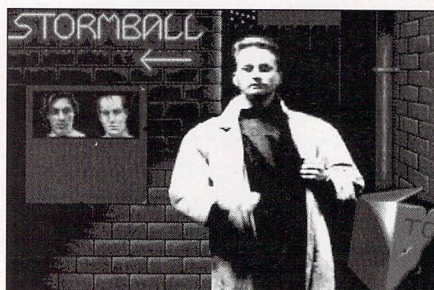
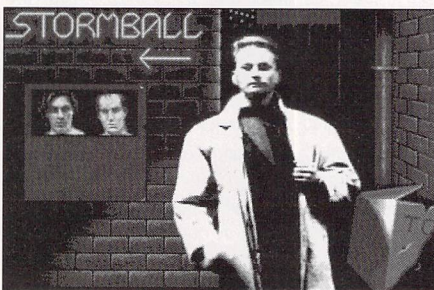
Ian: The programming fees are the first cost to consider and these are all fixed under the contract. On top of that, we generally allocate some extra money for the graphics artist and the development of the sound. The other expenses are virtually all down to production and marketing.

Michael: We put aside 10% of our estimated sales for advertising costs. Our estimates are based on past sales experience and speculating about press reviews. These budget figures get adjusted during the build-up. If you're planning a project a year in advance you don't know

A VERY DODGY CHARACTER INDEED



■ **This character, provisionally named Dexter Sinister, is described on the *Stormball* Sound Requirement sheet, where Millennium advise sound programmer Richard Joseph of the audio effects needed for the game: "Between games you can place bets with a sinister character in back alleys – maybe needs some quiet jazz bar music in the background (saxophone?)"**



exactly what it's going to do, but you can make a fair estimate of how an average title is going to sell. As you get closer to the release date you can start to refine the budget a lot more, place advertising for example. Not all of the money is spent in this way though – a great deal of money is spent on promotional items to go with the product.

STF. How much do you pay the programmer for his work?

Ian: The payment made to the programmer is based on a royalty. Clearly this can only start coming through when the product is on the shelf – and he needs something to keep himself alive

"If you try to knock a programmer into doing what you want, I think you lose the important creative element"

– Michael Hayward,
Millennium's Managing
Director

meantime. So we agree on an advance against his royalties – a lump sum, split up into various "milestones." Every time the programmer passes a milestone he's paid an appropriate amount for his work. For example, milestone one might be to get an object moving around on screen, milestone two to build in some intelligence, and so on.

Of course, the ultimate milestone is to complete the game. By the time the programmer delivers the final disk to us, he's received all his advances. Then he has to wait and see if the sales exceed his royalties. This is what we're aiming for, but it doesn't occur very often.

STF. Would you be prepared to say how much the advance was for Stormball?

Michael: Er – no. When we pay in advance for a title, we work out what we think we're going to be able to sell in the first three months of sales, and the advance is worked out from that. We think Stormball's going to be a strong seller, so it's –
Ian: – a fairly healthy advance!

STF. Do you have written contracts?

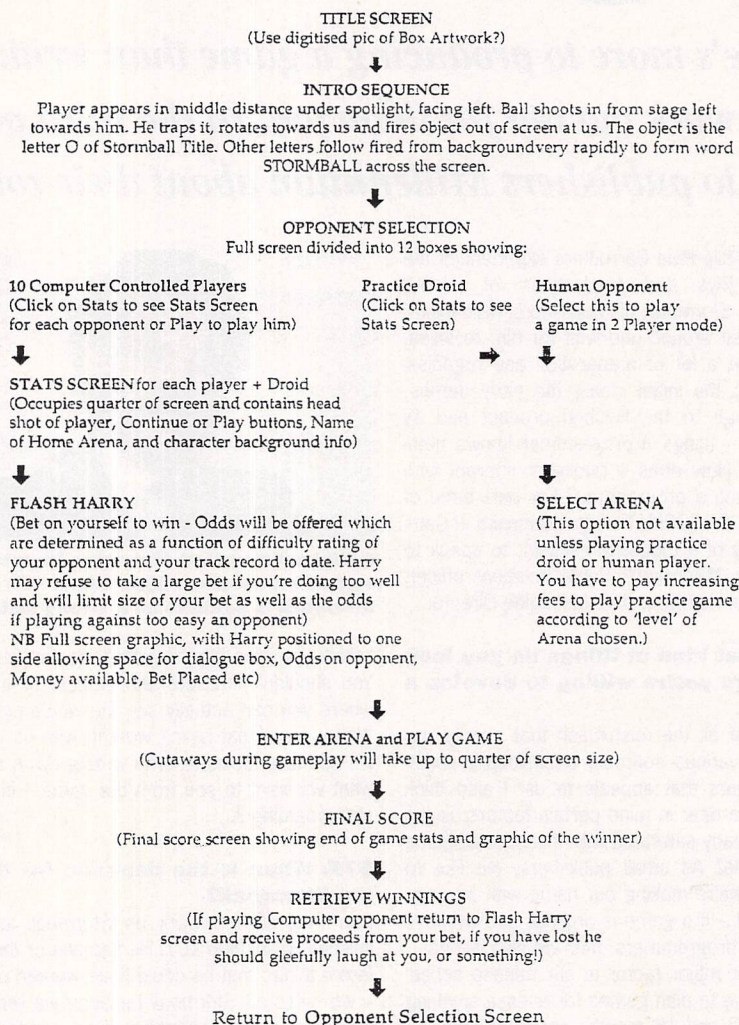
Michael: Yes. I know that our contracts are much easier than most publishers' contracts – our programmers tell us this. We make no deductions at all, so if the ledgers show sales of £100,000, the programmer gets 15% – or whatever the percentage is – of the £100,000.



■ Ian Saunter, Millennium Public Relations man: "Making our name with originality"

STORMBALL MEETING NOTES - 21 Jan 91

We agreed the following sequence of events to take place in the game:



■ Millennium hold regular meetings to discuss all aspects of the game with the various programmers. These notes are the results of a meeting in late January, about six months after the game was begun, setting out the basic sequence of the game events

STF. Finally, how does a talented but inexperienced programmer get his game published without being taken for a ride?

Ian: It depends who he goes to. I honestly don't think that publishers are in the business of cheating programmers – it's simply not in their best interest, because they'll lose that programmer.

Michael: But we know it happens. Just about everybody we've ever worked with has said this has happened to him in the past. The programmer gets a percentage of the sales and sees himself doing all the work, but he may not see the amount of effort that goes into it from the publisher's side.

We spend a great deal of time working with the programmers, doing the advertising, the illustrations – all the rest of it. There's a huge amount of work involved and by the time you deduct from total sales the advertising costs and so on, there isn't a great deal left. You make money in this business by having titles that sell consistently.

The profit comes in only when a title manages to break through the 18 to 20,000 units barrier. The publisher loses everything if a title is

a failure, but at least the programmer has still had his advances. If the title's a massive success, it's true the publisher does a lot better than the programmer – but not many titles are fantastic successes.

There must be a tremendous temptation for publishers to underpay when someone comes along with a really brilliant idea and you know he's asking far too little for it. Even if somebody's first game is good enough, we wouldn't pay him the full going rate that we pay experienced programming teams. You have to make allowances – a new programmer might not finish the game. If he's got no track record, it's a bad commercial decision to pay somebody £20,000 because you're not giving yourself any leeway. **stf**

■ Next month in the fourth and final part of our "Game is Born" series, you won't just be able to read about the making of Stormball, you can actually play it for yourself too! On next month's Cover Disk, exclusive to ST FORMAT, we're bringing you a playable demo of Paul Carruthers's soon to be released game. Don't miss it!

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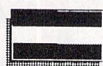
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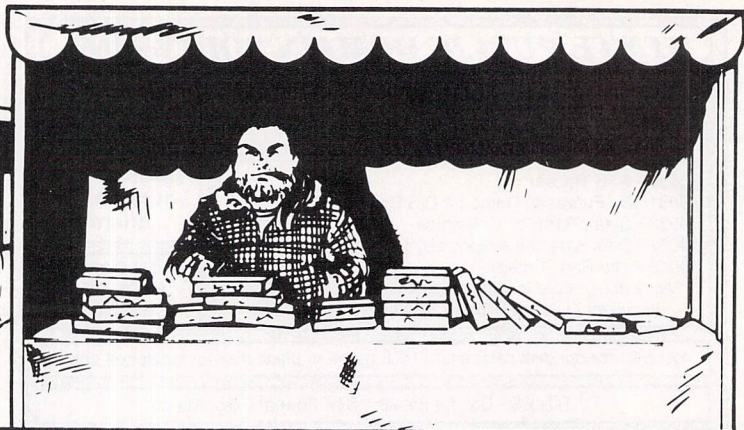


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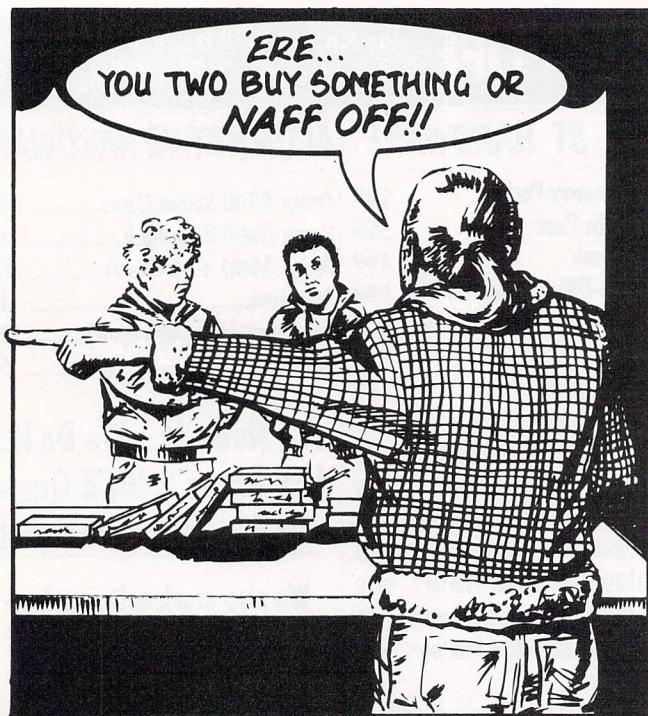


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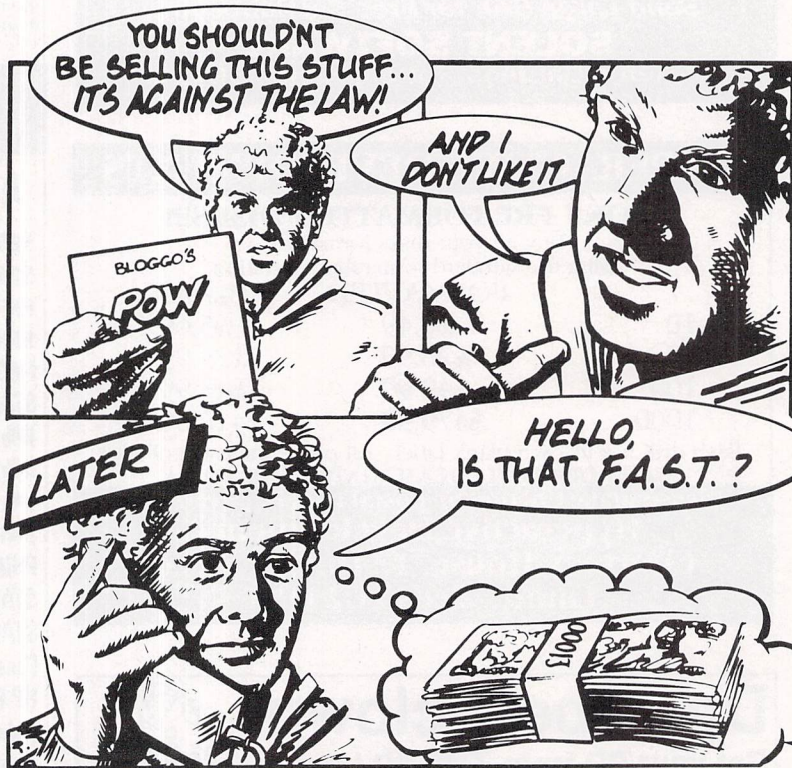


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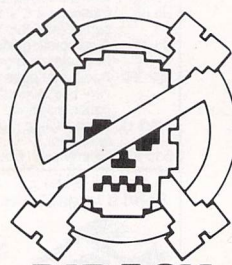
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DEMOS DEMOS DEMOS **DEMOS** DEMOS DEMOS DEMOS

ULM MEGADEMO

Riverdene PDL – Disk DEM850ST



Bit of a corker, this one. Never heard of ULM, but some of the guest demo groups are familiar – anyone remember the Lost Boys? Everything about this demo oozes high quality and ULM seem to go a bundle on full screen demos. As a result everything looks and sounds bigger and better. What's more, twiddly internal sound is kept to a minimum and there's some radishly brilliant *Tracker* music. Some of the themes are a bit dull, but when a demo looks this good you don't care.

STF Rating – 91%



■ Not another megademo with a ball in it? Well, yeah – but this one has a special refractive ball with superfast graphics

FISH 'N' CHIPS MEGA DEMO

This one comes straight from the demo writers, but you should be able to get it from good PD libraries. Bit of a corker as well, with humour that isn't racist or sexist – just plain bizarre. The menu screen is wicked, but probably not suitable for younger folks. Highlights include the



■ Sausage and chips twice, two sausage and chips with onions, cod and chips, and four pancake rolls and gravy. Right, are you sure you don't want anything else?



■ Turn up the volume and scare the short and curlies off your nearest and dearest with the particularly grim *Slaytanic Cult* ghoulish demo – ooh, mummy, I'm scared

Techtron Demo, dedicated to the Carebears, and the *Acid Demo*, with its terrific sample.

STF Rating – 86%

SLAYTANIC CULT MUSIC DEMO 7

MPH – Disk DEMG38

It's nice when you finally get to hear some doody sounds rather than the usual awful stuff. This demo has eight *Tracker* tunes, each accompanied by a horror picture. The demo explores a variety of moods and tempos in a cyber-punk scenario – plug the stereo in and thoroughly annoy everyone within a 12 mile radius. Spiffing stuff.

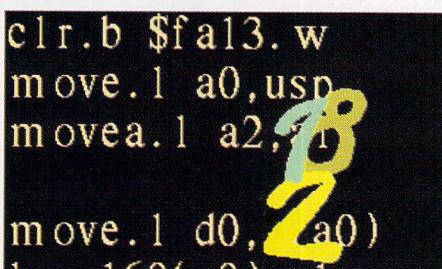
STF Rating – 84%

TOTAL VISION

Riverdene PDL

In this *Alliance Demo*, TVR get the top billing, although most of the regular *Alliance* crews show up here as well. The best bits in the demo are the loading and decompressing screens – nothing original happens in the demo itself. If you don't already own a megademo then check it out – it's worth a look, though isn't anything to write home about.

STF Rating – 82%



■ Right then, who understands a blimmin' bit of those lines of code? The writers of the *ULM Megademo* obviously do. I'll stick to my BASIC, thank you very much

YOUR PD REVIEW



This month's guest reviewer – and the first winner of our £25 prize for PD reviews – is **Bill Croan**, from

Tyne and Wear. If you fancy appearing in *ST FORMAT* too, send your review of a piece of PD software to PD Reviews, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW.

Remember, your review must be no more than 200 words, and we need it on disk as an ASCII file, *without* hard carriage returns at the end of each line. Also include a printout and a copy of the program you're reviewing, along with the name of the PD library you got it from. Don't forget to include your name and address too. Sorry, but we are unable to return any contributions.

PREDATOR 3

The Other PD Library

No, not a new film but an Audio Video Sequencer (AVS) demo. Only runs for a minute or so, but it's worth a look. Suffice to say, if Arnie had met this one he wouldn't have wanted to blow *her* up! Unfortunately requires a full 1MByte to run with the full range of sound effects, but you can load some *Cyber 2* files into a 520ST using the *Animate 3* program. There is also a cut-down version for the 520ST included on the disk.

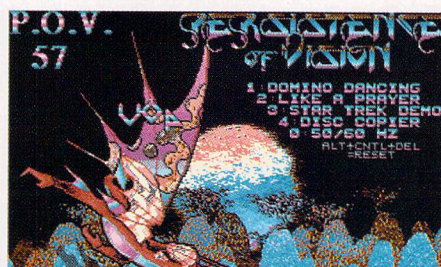
STF Rating – 82%

P.O.V. COMPILATION 30

The Demo Club

Persistence of Vision are a group of coders who assemble demos on compilation disks. This one includes *Acid Burn Demo 2*, *Demon Demo*, *Counterpoint Demo* and the *CST Demo*. The *Acid Demo* is definitely the best – a marvellously clear sample with some brain-melting graphics.

STF Rating – 78%



■ "Lieutenant Madonna, could you hail the hopelessly middle-of-the-road duo on the planet Boringus 3 and ask them why one of them never speaks or moves?"

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GAMES COMPILATION

Elmsoft PDS - Disk STRAT27

Three games are on this disk. *Draw Poker* is an attractively designed American poker game. You're given a pot of \$250 with which you can lay cumulative bets, and the return doubles with each raise. *Naval Blockade* is another PD computer Battleships game - this one is very well programmed and your ST makes a tough opponent. In *Top of the Pops*, you have to get a record into the charts - a very boring game.

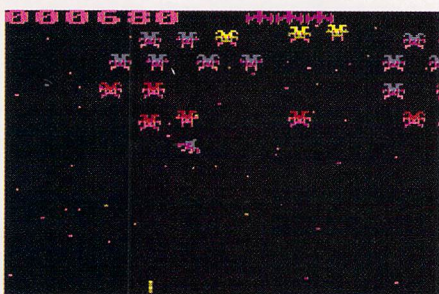
STF Rating - 65%

A QUEST FOR GALAXIA

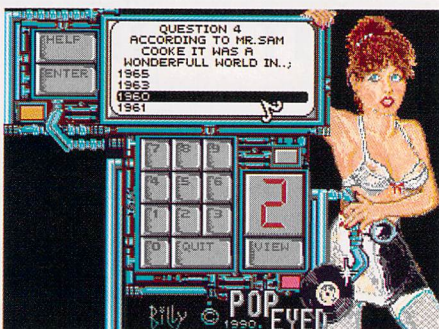
The Page 6 Library

Wow, *Galaxians* surfaces again. The game remains moderately faithful to the original, although the sprites are very small. Speed of play is excellent and the excitement soon mounts up. This one is better than other more expensive games.

STF Rating - 78%



■ *Galaxia* proves that old computer games never die - they just get recycled



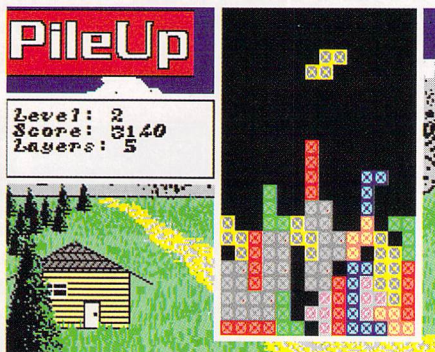
■ Erm, yes, Carol. I'd like to have one from the top, two from the middle, three from the bottom, and at least six hours to work out the answer, please...

POPEYED

The Other PD Library

In this program you must answer questions on '60s music. An "adult" cartoon sequence slowly builds up for every answer you get right. Some of the end cartoons are a bit, ahem, revealing, but they're little more than what you see on *The Sun's* funnies page. The program's well designed and combines digitised images with digitised music. Well worth a look.

STF Rating - 85%



■ In the *Tetris* clone, *Pile Up*, turn the blocks around until they all fit together. Public education - you just can't beat it

PILE UP

The Page 6 Library

Pile Up is another PD *Tetris* lookalike. A series of oddly shaped blocks appear at the top of the screen and you have to manoeuvre them into place so that they form a series of unbroken lines. The further you get, the faster the action becomes and the quicker you must react to place the falling blocks. Well programmed but the sluggish controls ruin the fun.

STF Rating - 61%

ELECTRONIC JIGSAW PUZZLE

The Page 6 Library

A shift-the-squares game, quite similar to a little program called *Puzzle* which was on STF's Cover Disk 17. This one has better features and you can configure it to load up a variety of picture formats. Excellent piccies.

STF Rating - 90%



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9. Perfect Comms Program. This one can chuck someone else off-line when you really want to log on
10. Duff Dive Simulator. Yes, you too can obtain the diving prowess of a brick



■ Fun with an *Electronic Jigsaw*. In case you're really wondering, the picture shows Bananarama - and no, they're all clothed no matter how you rearrange it...

ART AND MUSIC ART AND MUSIC ART AND MUSIC

SAMPLE COMPILATION

The Demo Club - Disk P.O.V. 57

This demo has three mixed sample songs. *Domino Dancing* by the Pet Shop Boys (music for yuppies who don't like to dance), *Like A Prayer* (music for 16 year old girls who do like to dance) and *Star Trek* (music for people who don't dance). The samples are all of a high quality, although the mixing is a bit dubious.

STF Rating - 82%

STOS TRACKER

Riverdene PDL - Disk LAN861ST

Proving that you don't need machine code to create decent music on your ST, this *Tracker*

program is written in STOS, the flexible game-creator language. The music that comes with



■ Has anyone ever actually used STOS to write a game? Answers on a postcard...

this program is excellent, although it's bound to be familiar to TCB Tracker fans.

STF Rating - 77%

TRACKER COMPILATION

The Demo Club - P.O.V. Sound-tracker

This is the latest in a long line of *Tracker* compilation disks. The menu chooser is attractive, though the internally-generated chip music grates on your nerves after a while. The best track on the disk is undoubtedly *Rctrack*. Just turn up that monitor volume and enjoy.

STF Rating - 78%

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UTILITIES UTILITIES UTILITIES UTILITIES UTILITIES

NORAD

The Page 6 Library

This program plots satellite positions on a global map. In these days of cruddy satellite TV it might be quite useful when you have to decide where to point your dish. There are 97 satellites listed in the program and you can obtain information about them just by clicking on the map.

STF Rating – 74%

DOUBLE SENTRY ACCOUNTS DEMO

Caledonia PDL – Disk AU0025

Try the demo out before you buy the full version at £75. The program is GEM-driven and includes purchases, sales, cash books and reports. You can define as many ledgers as your ST's memory can handle and then examine and modify them. Worth a look if you're a bread head.

STF Rating – 80%

HARD DISK UTILITIES

The Page 6 Library



When you've got the vast amounts of disk space afforded by hard drives, it becomes important to be careful with your data.

Page 6 have put together a compilation of the more useful utilities to keep your drive running and increase its performance.

The *Drive Cache* utility on the disk remembers file access routes without searching for them, thus improving disk access times. Two speed routines can calibrate your drive and give you an impression of how it's running, and *Turtle* is one of the best hard drive backup programs available. Even if your drive takes a nose dive, there is an installation program on the disk to sort things out. Every facet of drive maintenance is covered here. Highly recommended.

STF Rating – 92%

THIS MONTH'S CHOICE FOR TOP PD

CODEHEAD UTILITIES DISK

The Page 6 Library

Codehead are an American software house who regularly turn out tasty productivity programs. The majority of their back catalogue is in the Public Domain and is good value for money. On the disk are:

- **Art Gallery** – a desk Accessory enabling you to view *Degas*, *Degas* compressed, *Neo* and *Tiny* format pictures from the Desktop
- **Desk Manager** – a Desktop .INF loader which loads the correct .INF file for the resolution you're in. It also only loads programs and Accessories that work in that resolution
- **Head Start** – an AUTO folder program which enables STs with TOS 1.2 or below to auto-run a program
- **Hot-Wire Demo** – the full version of *Hot-Wire* enables you to launch a program via a "hot-key" from Desktop without having to root around inside folders
- **The Little Green Selector** – kicks out the GEM item-selector and replaces it with a far better alternative
- **MidiMax Demo** – helps out the MIDI veteran with a host of useful utilities. Try before you buy
- **Multidesk Demo** – making life easier than ever before on the Desktop, Multidesk enables you to load up Accessories after booting up, as well as configure the display to your liking
- **Pinhead** – Accelerates boot-up time and takes only 1K of memory. Especially good if you have plenty of Accessories to auto-run.

GENERAL UTILITIES

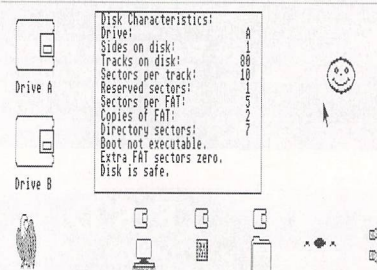
The Page 6 Library

16 programs which might well save your life early in the morning when you've got a crucial hangover and there's no coffee in the house.

- **A Copy** – Tut, tut... A copier program
- **Big Screen** – This pretty freaky program sets up a virtual screen which overlaps your

monitor. By moving the mouse you can reveal part of the whole screen on your display

- **Fix Disk** – This program retrieves data from damaged disks and then repairs the damage
- **Flu Virus** – This demonstrates the effects of ten common ST viruses
- **Head Start** – The Codehead GEM auto-running program
- **J Clock** – A nifty clock program that survives resolution changes
- **My Type** – A fully featured typewriter
- **PCF554** – Actually the codename of a 5.25 inch drive which you can use especially with this program
- **Remove** – Enables you to re-name folders or disk names without the complex GEM drag and delete routine
- **Track it** – Displays which disk track, sector and side you're accessing from your drive, in the top right of the screen
- **Undelete** – It undeletes files, but only if you've not written to the disk after the mishap
- **Virus Killer** – Wipe out naughty invaders on your disk with this helpful utility
- **Zap** – A program editor, enabling you to monkey around with ASCII or hex values
- **Format 40** – A little Accessory formatting program, enabling you to format Mac disks from your ST.



■ This new, unique and ultra-improved **Virus Killer** is righter than right for those annoying little silicon epidemics

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Our aim is to make this directory as complete as possible. If you run a PD library not listed here and would like to be included, or if you are already listed and want to amend any details, then send full details and a copy of your latest catalogue to: PD Directory, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW

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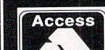
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Animate with GFA Basic

In the third instalment of FORMAT's GFA Basic tutorial, James Beswick introduces some nifty graphic techniques



After last month's introduction to handling sprites, we now take a final look at some graphic techniques, then the world of sound, as well as file and disk accessing. We also resume work on the ST FORMAT GFA Demo. So without further ado, load up your GFA Basic 2 and read on!



THE END OF GRAPHICS

You really have to know something about animation if you intend to write a game or demo program. In games, for instance, animation is used to make ships explode, robots walk and so on. So how is it done?

Several pre-drawn sprites, each slightly different from the last, are PUT to the screen one after the other so quickly that the eye cannot perceive each frame change. The result is an optical illusion – you think the object is moving. (If you want to know a bit more about animation, turn to page 22 for the start of our big animation feature.)

The GFA Basic command DIM Seq\$(frames) creates an area in memory for the sequence of images you are going to use for your animation. The frames are then stored in sequential order, as Seq\$(0), Seq\$(1) and so on. The demonstration files on the Cover Disk explain this in detail.

MASK YOUR SPRITES

If you have a backdrop to use with your sprites, you need to draw some **masks**. Masks are the same shape as the sprites, but they are only one colour – zero.

Place Mask\$(0) at the location on-screen where you want the sprite to eventually go. It effectively cuts out a hole in the screen, ready for the sprite. Then, PUT Spr\$(0) on top of the

mask. This prevents you obliterating parts of the backdrop when you GET the sprite.

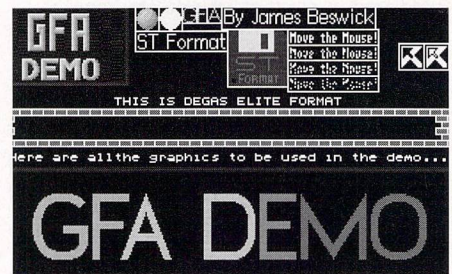
FLIPPING 'ECK

Animating many sequences on the screen at once can cause flickering – and this looks unprofessional. When you get to this point, try to use page flipping. This enables you to PUT all the sprites onto an invisible screen, then swap that screen for the real one. This uses only an extra ten lines or so in your program – and it actually works!

SCROLLING

You're not likely to produce great scrolling using PUT because you can't move the screen quickly enough. Here's where the BMOVE command comes in.

Bmove Xbios(2), Xbios(2)+destination, length



■ Now you can introduce simple but effective animation techniques with your own copy of GFA Basic

Xbios(2) is the memory **address** where the screen starts. This is a direct internal call, and it indicates that it is the screen area that is to be moved. **Destination** indicates the number of bytes the block is to be shifted, and **length** equals the length of the block in bytes.

A FURTHER DICTIONARY OF GFA BASIC

***ANIMATION** – Flicking very quickly between successive frames gives the effect of movement. See DIM, FRAME and SEQUENCE.

BMOVE – Moves an area of memory extremely quickly – good for scrolling. Comes in the format: BMOVE source, destination, length. Source is the start address of the memory (see XBIOS) and destination is the new position for the block. Length is the length of this data block in BYTES.

***BUG** – Techie term for an error in a program.

***BYTE** – In low resolution, each pixel uses a byte of memory. There are 32,000 of these on a single screen and 160 bytes per horizontal line. See BMOVE.

CLOSE – You must always CLOSE a file after opening it.

DIM – DIM Seq\$(frames) – Creates room in memory for an animation sequence. Seq\$ is the name of the sequence and frames indicates the number of frames in the sequence. See ANIMATION and FRAME.

ENDIF – See IF.

EXIST – IF EXIST ("A:\Filename.Ext") – This checks whether a given file exists on the disk. This is good for trapping BUGS.

***FILING** – Two types: stack filing and random access filing. The stack system is easier to use, but the latter gives you more flexibility.

FOR – For A = Start to End – Loops the program between itself and the NEXT command until A equals the value of END. Each time the program is looped, A is incremented by one, unless you use a step.

***FRAME** – Animation SEQUENCES are made up of a series of frames, which are sprites slightly differing from each other. See ANIMATION and DIM.

IF – If condition – If the condition set is true, then the indented section of the program that follows is executed. Works in the same way as a question in a flow chart.

INPUT – Input #Ch,Info\$ – Input Info\$ – Used to extract information from a file opened in channel ch, – or without #ch, it asks for information from the user.

***MASK** – Every sprite or frame that is to be placed over another sprite or a background should have a MASK to prevent the background from being blanked out around the sprite. The MASK is identical to the sprite but is completely one colour, namely colour zero.

NEXT – Next A – Marks the end of a FOR loop. See FOR.

OPEN – Open "I",#ch,Filename B – Opens the file through channel ch and enables you to read data from the file. See INPUT and CLOSE.

PAUSE – Pause TIME – Simply stops the program for TIME – fiftieths of a second.

PROCEDURE – Procedure Name – You can put repetitive routines into procedures and call them up with the command @Name. Once the procedure is executed, you are returned back to the point where it was originally called. See RETURN.

RETURN – Marks the end of a procedure.

***SEQUENCE** – A series of FRAMES.

XBIOS – There are about 25 different Xbios internal calls, and some are extremely likely to cause a machine crash if you don't know what you're doing. Xbios(2) tells the program where the screen starts in memory and we used Xbios(6) in the non-flicker routine.

* Note that terms marked with an asterisk are jargon, not specific GFA Basic commands

HOW TO ANIMATE IN GFA BASIC 2

1. Draw several sprites for your animation sequence.
2. Load these into memory with the BLOAD command.
3. Create space for this sequence using the DIM command.
4. Then GET the sprites into their allocated positions.
5. To animate them, flip through the sequence using a FOR...NEXT loop and the PUT command.

As an example, if you want to scroll the whole screen down, you need to loop the following line 200 times:

```
Bmove Xbios(2),Xbios(2)+160,32,000
```

A single screen line is 160 bytes in length, so the whole screen takes up 32,000 bytes – 200 multiplied by 160. To scroll it horizontally, you need to move the screen in jumps of eight. This is a very advanced command which is extremely fast, so practise and experiment before you attempt to write anything too complex.

SOUND COMMANDS

GFA Basic has a fairly average selection of sound commands. Unless you're an ST music programmer there's not much chance of you producing anything of high quality from the ST sound chip. Nevertheless you can still achieve some good effects if you persevere.

The primary command to create beeps is SOUND, which comes in the format:

Sound Voice, Volume, Note, Octave, Duration

Voice is a value between zero and three and this selects one of the four possible sound channels. **Volume** simply indicates the loud-

ness of the sound. The intensity ranges between 0 and 15 – 15 being the loudest. **Note** is a value between 1 and 12 – respectively the notes C, C#, D, D#, E, F, F#, G, G#, A, A# and B. **Octave** is a value between zero and eight, which selects one of eight octaves in which the note is to be played. **Duration** indicates the length of time that the note is played. This is measured in fiftieths of a second.

There are drawbacks to using the ST sound chip – it takes hours of experimentation before you get anything vaguely worth listening to – so why not save yourself a lot of trouble and use sampled sound or sequenced music? In the demo, you can hear music made with *Quartet* (£49.95, Microdeal 0726 68020), but there are many other excellent packages available. Next month, we explain more about samples and sequenced sound, but in the meantime take a look at this month's Buyer's Guide supplement for more information and recommended buys.

DISKS AND FILES

If you use the ST's GEM Desktop, then you know about files. The files we are concerned with here are basically the same. There are two types of filing – stack filing and random access filing. With the first, you have to go all the way through a file to get to a piece of data, but with random access filing you can go directly to whatever you're looking for. The stack system is simpler though and the most widely used – you're not restricted to the length of a file as you are with the random access method.

To read data from any file, you must open it first. There are two ways of doing this. First, there is the OPEN command:

```
Open "I", #1, "A:\File.Inf"
```

In GFA Basic you can have up to four files open at once. Each file has its own channel number (from one to four) – determined by the #ch. The filename is written in the format:

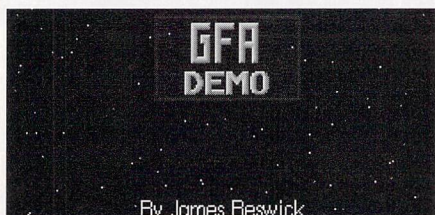
```
drive:\path\filename
```

The name of the file you want to open is written in quotes at the end of the command. However, this only OPENS the file. To extract data from it, you need the INPUT command:

```
Input #1, Info$
```

Here, #ch indicates the file's channel (usually one) – the one you used when you opened it. Info\$ contains whatever information is obtained. This isn't very efficient though because you don't have much control over what is extracted from the file. After you've got what you want from the file, you must then close it, using the CLOSE#ch command.

Well, that's it for another month. All the commands covered have their own demonstration files on the Cover Disk. Remember, you can't damage your ST with GFA Basic so don't be afraid to experiment. We've covered quite a lot of advanced ground this time round, but don't despair. If you're getting lost, drop us a line at: This GFA Tutorial Lark's Got Me Lost, ST FOR-



■ The famous starburst from the GFA Basic demo – with a little help from ST FORMAT...

■ For a full list of the GFA Basic 2-torial files on this issue's Cover Disk, see page 45. To run any of these, you need GFA Basic 2, which was yours free with ST FORMAT 19. (If you missed that, see the Back Issues offer, page 142). If you're really bitten by the programming bug, you can upgrade with the excellent GFA Basic 3 – see page 150.

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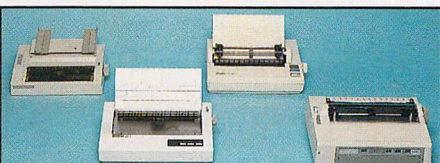
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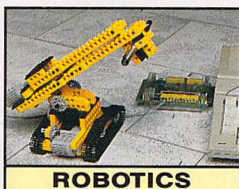
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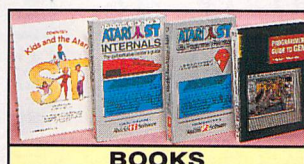
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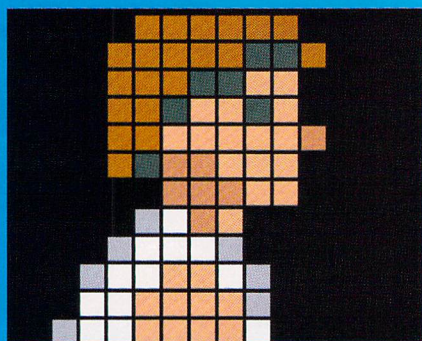
Take a wander through the techie zone, where ever-helpful *FORMAT* Technical Editor Neil Jackson

answers your most difficult questions. This month we look at digitized piccies, animation (of course!) and disk editors...



JARGON-BUSTERS – TEN 'TOON-TYPE TONGUE-TWISTERS

1 Bitmaps – Blocks of pixels (picture elements), with a colour for each pixel. Literally a map of all the bits (pixels) and their colours. All hand-drawn images are bitmaps.



■ Magnify a bitmapped image and you see the little coloured bits (ooer, etc)

2 Cel – Another name for a brush (the type in art packages, not the type with bristles). Another term that originally comes from the cartoon biz, where artists paint cartoon figures on clear celluloid film, which is then overlaid on top of a background.

3 Frame-rate – The number of still pictures per second. Normal TV pictures are transmitted at 25 frames per sec (30 in the USA), but animation only needs to be faster than about 10 frames per second or so to fool the eye into thinking that things are moving.

4 Hot-spot – One corner of a series of bitmaps which form a sequence. Each bitmap has its own hot-spot, which is placed in the same position as the previous bitmap's hot-spot, but on the next blank frame. It's rather like an imaginary hole-punch which stops sprites from jumping or sliding all over the place. You don't actually see any hot-spots, because they're deleted later.

5 Mask – Used to cut out background areas temporarily while foreground sprites are in place. The mask is exactly the same shape as the bitmap sprite, but has only one colour. It's used like a pastry-cutter to remove chunks of the background, store them

in memory and then replace them when the sprite is repositioned. Most animation packages can work out their own masks for any sprite you design.

6 RGB – Red, Green, Blue. A colour on-screen is composed of a mixture of all these three primary colours. The STFM has eight levels of each, while the STE has 16 levels (enabling better shading).

7 Render – Do a major effect. Complex animation tricks, like twisting, spinning and shrinking, can be done over several frames for a DEF 2-type effect. It can take a while to set these effects up so that they work properly, so an animator usually previews them many times before issuing the command to render the sequence. This is because rendering is usually irreversible – mess it up and you have to redo the whole lot again!

8 Sprite – Another name for a brush, also known as a cel. Usually a bitmap image which is meant to move over the top of a picture without affecting the background.

9 Transparent colour – In animation, one colour is set aside as transparent, though it may actually be a true shade. The ST knows which colour you chose as transparent and lets the background show through wherever it's displayed. This is used to create the effect of cels, where irregularly-shaped bitmaps do not fill a neat rectangle. The outside edges of the bitmap are filled with the transparent colour to enable the image to be moved around without showing the rectangular block which actually contains it.

10 Tween – Short for "in-between." To make an animated sequence, the ST is given information about the start and end positions of a brush, and it works out the in-between positions. The process is known as "tweening", and came originally from the cartoon film industry where junior (or tweening) artists would do the same job on cartoon characters drawn by the top artists. It's a tedious task I bet they're happy to leave to the ST!

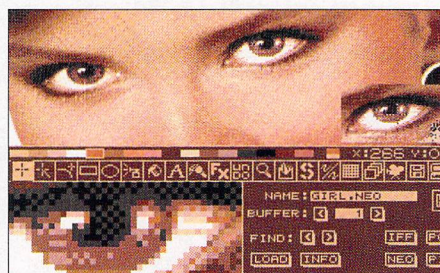


GET ANIMATED!

Jon Stiles from Gutersloh, Germany, wants to know *ST FORMAT*'s favourite animation package, so he can buy it himself. Aha. Bit of a problem there, 'cos no single package performs all functions the best. A combination of utilities is still the only way to get top-quality animation, but many provide enough to get you started.

Cyber Paint 2 (£49.95, Electric Distribution ☎ 0480 496666) has to be the best all-rounder because it has all kinds of masking, clipping, and pasting functions and is very simple to use. *Deluxe Paint* (£49.99, Electronic Arts ☎ 0753 49442), though mainly an art package, has many similar effects, but is not quite so versatile. However, *DPaint* can produce smoother curved lines and better irregular-shaped brushes – but then, *Cyber Paint 2*'s superior sequence-effects enable picture-tumbling, timed colour-tinting and tweening at the drop of a hat.

Also useful for the animator is the ever-popular *Degas Elite* (£24.95, also Electronic Arts), which still has features not found in the others! It's good at treating individual frames,

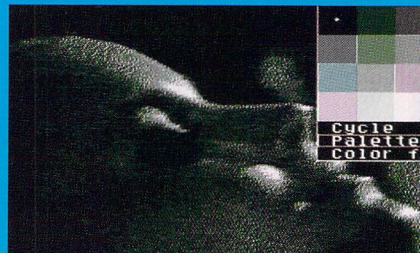


■ *Deluxe Paint* has better brush effects than virtually any other package, but it's mainly an art package and its animation suite is tough to get to grips with

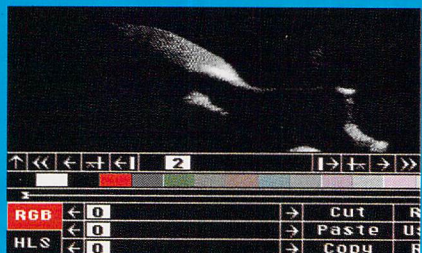


■ *Cyber Paint 2* is an animator's dream. It's packed with handy gadgets to help you bash out sequences quickly

SEEING THROUGH SAM'S (DIGITAL) EYES



1 SAM digitised pictures often use the entire 16 colour palette, but this doesn't necessarily make life easier when you're trying to alter them later



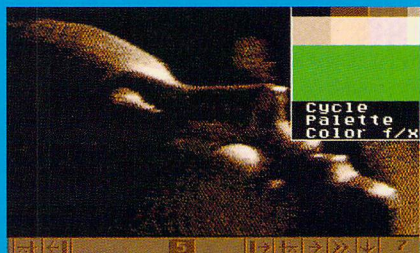
2 You're better off saving the pictures once they've been quantised down to eight grey-scales, since this uses only half the palette available on the ST



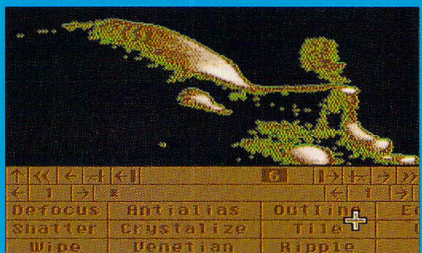
3 You can then set the unused eight colours to a contrasting shade of your choice and begin re-ordering them, without affecting the original image which you want to touch up



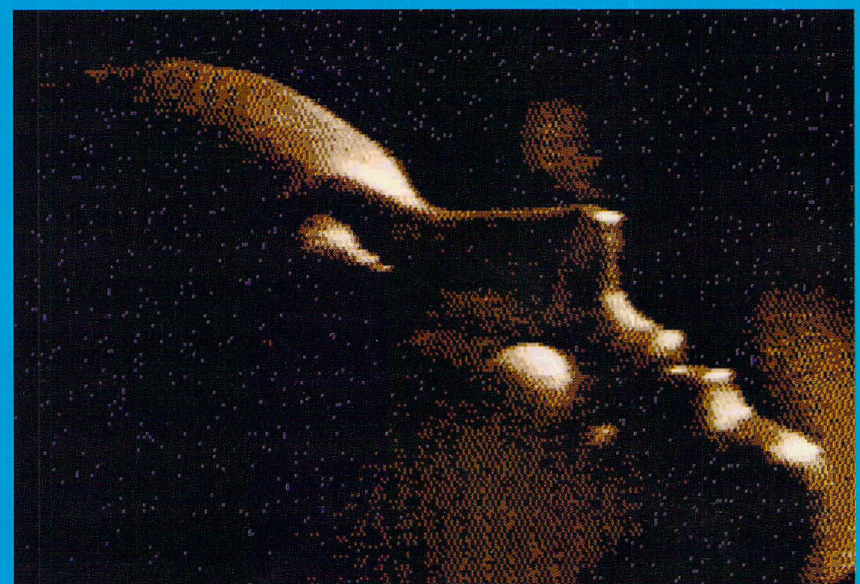
4 Once the extra colours have been rearranged, you can start doing things with both sets of colour, like changing the image and preparing it for the addition of a background



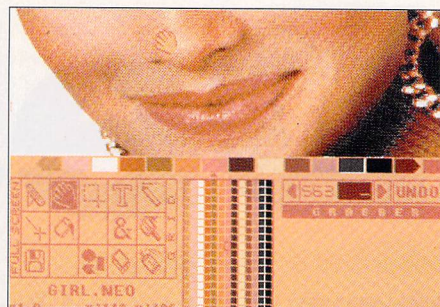
5 The eight colours left in the Bo's face have been turned into something resembling flesh tones, still leaving the other eight colours free



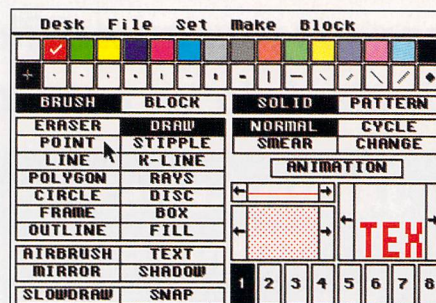
6 Small "holes" left by the digitiser can be filled in using Edge In, to prevent the background showing through. These edges are later coloured black



■ The final image uses a simple airbrushed background, created with the spare eight colours only. This is then pasted behind the original digitised image



■ **Neochrome Master** contains a good animation section and it's Public Domain. Who says money doesn't grow on trees?



■ **Degas Elite**, as dependable as ever, can be found in most animators' homes. It's almost a standard upgrade for your ST!

➤ changing picture resolutions, isolating particular colours and redistributing colour-palettes. This makes it part of *FORMAT*'s standard kit. *Art Director* was a very early animator package but won few hearts because of its confined amount of brush space. We use it very occasionally.

Finally, the Public Domain versions of *Neochrome Master* and *Ani ST* (available in the *ST FORMAT* graphics collection – see page 150) are useful for short sequences and run on the smaller 520STs. However, for large sequences, a Megabyte or two is the order of the day – regardless of the package used.

SAVE TIME – SAVE COLOURS

Simon Bradshaw from **Sevenoaks** is having trouble with digitised pictures, taken from the SAM real-time mono digitiser. He doesn't like way palettes are saved with the digitised sequences and wants to know if there's a way to make them more manageable. To do this, it helps to know what SAM does to each frame.

SAM connects to your ST (via the cartridge port) and to a normal household video recorder. SAM has its own software which enables you to watch the video on the ST's display, in real-time (that is, at the same frame-rate as it's transmitted, with no waiting for the ST to decipher the picture). This means you can capture live footage (around 26 frames on a 1040 ST) and then save it to disk as a sequence of *Degas P11* files or *Neochrome NEO* files. The actual footage can come from your favourite video, playing in the tape machine, or direct "off-air" from the video's tuner, which means you can capture the *News* or *The Cosby Show*, live.

Sounds fantastic, but sadly the ST's lack of grey-scales can hold it back. An STFM has only eight possible grey-scales, ranging from black (0 red, 0 green and 0 blue) to white (7 red, 7 green and 7 blue), using equal amounts of each

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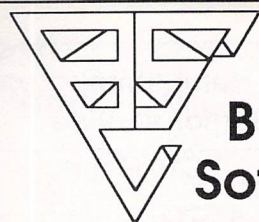
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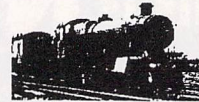


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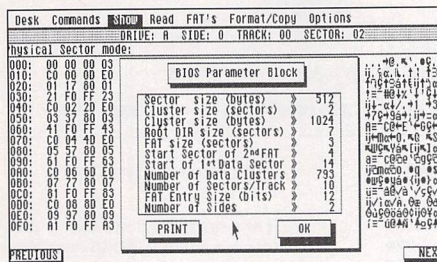
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■ **Knife ST** has the potential to utterly ruin your disks – but in the right hands, it's a lifesaver! See "Carve up your disks"

colour for each grey scale. To create the illusion of 16 shades of grey, SAM uses in-between shades which are not wholly grey (eg. 5 red, 5 green and 4 blue). The STE does not suffer this problem – it can display 16 grey-scales, all the way up to a "15 red, 15 green, 15 blue" version of white – but on the STFm, you can often get muggy, unsatisfying digitized pictures which often need retouching. And this is where Simon is coming unstuck. How do you get all the useful colours down one end of the palette, so that they can be ranged and spread? And how do you get rid of the awful in-between colours? How

"SAM can capture your favourite video or the Cosby show, live – but can you fix the colours and retouch the pics?"

can you have different coloured backgrounds when you don't have any spare colours?

Using a package like *Cyber Paint 2* helps immensely. First, before saving out the sequence or frame from SAM, use the quantiser function, set to eight levels, which forces the displayed picture to use only true grey-scales. Then import the image into *Cyber Paint*, and go to the palette section. Using the sliders, find each of the colours which are actually used in the image by altering one of the colour levels by a large amount. If the image changes colour on screen it is being used, so return that slider to its starting point and move to the next palette colour. After you've done them all, you should have eight "used" colours and eight "unused" colours, scattered randomly around the palette. Set all the "unused" colours to something stark and contrasting, like bright green.

Now duplicate that frame in the main *Cyber Paint* buffer, move to it and change the palette as follows. Note down the RGB levels for all eight "used" colours and alter the first eight palette slots to these levels. Set the remaining eight to the contrast green, then clear the screen. Don't worry, the palette remains intact, and you are about to restore the image.

Go back to the previous image and press <Tab> to clip the whole screen into *Cyber Paint*'s brush buffer. Now swap back to the duplicated (but blank) screen. Select Fit Colours from the Clip menu and the clipped image is reassembled invisibly, using the new palette order. You can now paste the clip to the screen using P, and your image reappears, exactly the same as it did before. The difference is in the palette only. All eight "used" colours are at one end of the palette, while the "unused" green

ones are free at the other end. You can now use range and spread effects to produce tints and flesh-tones without affecting the whole palette. And you still have eight unused colours to alter for producing a different coloured background.

CARVE UP YOUR DISKS

Feeling frustrated? The Atari manual told you nothing *really* useful about your disks? Okay, so you know how to use 'em, like **Carol McKenzie** from **London**, but not how to fix 'em? She's just gone and deleted her only copy of an important letter and she knows it's still there, somewhere. If only she could get it back in one piece, she says, without having to rewrite the whole lot.

FORMAT knows a way, and doubtless many of you know plenty of ways. The first thing you should do in this situation is write-protect the disk. *Don't use it!* Don't try and save anything else to it – or you'll ruin your chances of retrieving anything. Just leave it alone, until you can safely read "between the files" and find your lost data. If you can't wait – er, get help or give up!

The next thing to do is get hold of a disk editor (*not* ours! He's very busy) and, if you know how, get hacking. If you don't know how, but you'd like to – use *Knife ST*, one of the most comprehensive editors *FORMAT*'s seen. It has a detailed manual, which covers the concept of disk filing in a thorough and understandable manner. Using this in conjunction with the software itself, it's possible to extract parts of files, whole files, or batches of files. You can even develop new formatting methods to increase your disk storage capabilities. It really does have a lot to offer.

Incidentally, anyone remember the story about *FORMAT*'s Tech Ed erasing his Cover Disk pages (see *STF* issue 19)? It happened – but it wasn't me, honest. I still had to get the bloody things back, though! No prizes for guessing which helped most – (a) Steve "Publisher" Carey, the old Ed, (b) Trenton "Er...F***! Where's it gone?" Webb, or (c) *Knife ST*.

Believe me, sooner or later, you'll need it.

STICKY BALLS?

Does your mouse squeak as it wends its way across the table? Does it stick, steadfastly refusing to budge an inch until you *really* tug it? The chances are that you have one of the early

DID YOU KNOW?

● You can get a special kit fitted to your ST to make it switch between two versions of TOS. Goodbye incompatibility – and goodbye 50 quid, but Ladbroke computing reckon it's worth it. Phone them on ☎ 0722 203116.

● You can improve your Desktop about three trillion percent by using *Neodesk 3*. It entirely replaces your bog-standard puce green affair and makes working on your ST a dream. It's from American software house Gribnif, but you can get it (for £39.95) from Electric Distribution ☎ 0480 496666.

● If you use a piece of Shareware software regularly, you are legally indebted to the programmer, but if you decide you don't like it and give it to a friend, you're not. PD ain't the same any more, is it?

● It takes only one psychiatrist to change a disk, but the disk must *want* to change.

● You can connect your ST to two monitors at once, using a lead supplied by Microsnips (☎ 051 630 3013). You can have high, medium and low resolution at the flick of a switch.

● You can get started in animation using PD clip art. These pre-drawn bitmap images can be used as backgrounds and sprites without you needing to draw a thing. For where to get them, check out *FORMAT*'s comprehensive directory of PD libraries – see page 129.

experimental versions of the mouse ball, known simply as FO_1491_OL. They were dropped soon after tests showed they had problems, but several hundred made it out "onto the streets." The neat thing about the FO_1491_OL ball was that it was made of a different rubber composition which was supposed to grip all types of table top. The composition was unstable, however, and altered depending on the temperature.

So if your mouse is squeaking, its ball is too cold! Just turn it upside down and twist the ball-holder ring to remove it. Then the best way to warm it up is to carry it around in your pocket while you're at work and blow warm air onto it whenever possible. When you get home, just pop it back in its holder and things should be okay. Alternatively, you could just stop using your ST until the weather's better, maybe sometime in May. **stf**

LET'S HAVE THOSE DESKTOP TIPS!

It's not so simple, is it? It's not just a matter of plugging in your ST and booting up, not by a long chalk. So if you've got a tip, a short cut, an undocumented feature, a bug, a password – in short, anything at all you've found helps you get more from your ST – we want to hear about it! That way you can share your information with well over 55,000 fellow ST enthusiasts and possibly win up to £50. Or, if you have any kind of technical problem or query, we want to hear about that, too – 'cos if we don't know the answer, chances are that someone out of those thousands probably does!

Name _____
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My tip is: Games ☐ Desktop ☐ Music ☐ Graphics ☐ Cover Disk ☐ Other ☐

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UIS III.

Powerful replacement for the Atari Item Selector. Universal Item Selector III incorporates a host of utility functions: format disks, copy, move and rename files and folders, create folders, find files, set file paths, etc. "You'll wonder how you ever lived without it", ST Format, December 1990. Price: £19.95.

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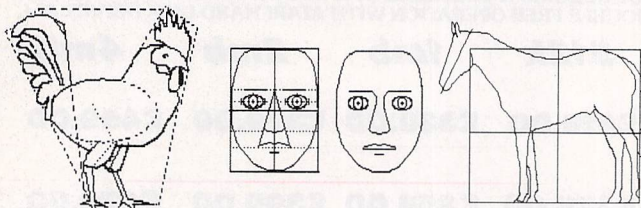
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Inside: Why do games cost so much? Megapaint 2 - an instant ST art classic?



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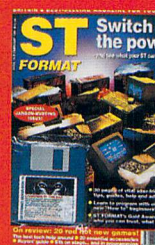
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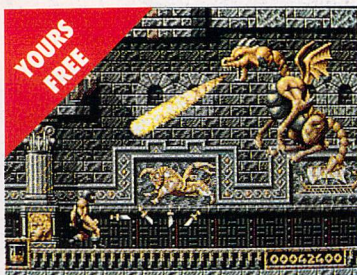
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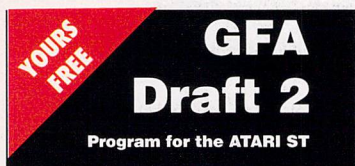
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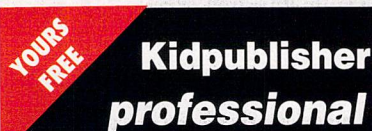
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Public education

For those just starting their first years in secondary school, nothing is more important than making learning fun. In the third part of our exploration of PD edsoft, David Jones sorts out the good from the bad

There is a broad range of PD edsoft available for 9 to 16 year olds, with most of the programs catering for children of widely differing abilities. We take a look at 45 programs that could assist in the education of secondary school children.

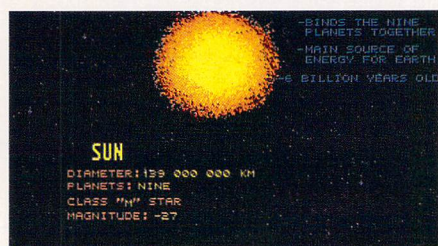
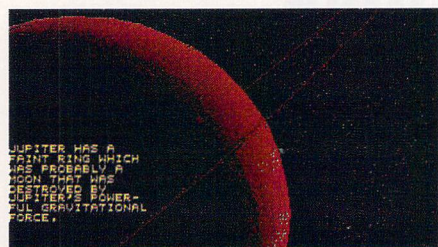
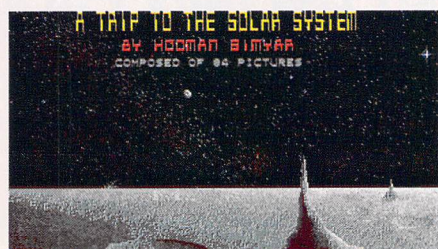
MATHS

Number Go Round, Number Maze, Shipwreck and STOS Maths Test are the best of the PD basic numeracy programs which are still relevant to children entering secondary education. See last month's PD Edsoft section for a review of these.

There are also four GCSE revision aids – Understanding Algebra, Understanding Geometry and so on. These are well written, contain numerous explanations and provide a reasonable coverage of the various Maths syllabuses although they are rather short on exercises.

SCIENCE

There are two Chemistry offerings. One called Chemistry deals with valency – only a small section in most syllabuses. Despite some pleasing graphics the program, a mix of tutorial and questions, only lasts 30 minutes. The second program, Elements, is a very useful resource program and provides a complete on-screen



■ **Tour of the Solar System: boldly going where no edsoft has gone before!**



■ **Well, yes, it is very educational, but the Body Shop that I know is nothing like this!**

periodic table. Obtain a profile of facts by clicking on any of the elements shown on the screen.

Body Shop is a straightforward human anatomy program. You must match the names of bones and organs with a selection of dismembered bits and then correctly position them in the body. Not bad, but it has tiny graphics – difficult when you need to tell your gluteus maximus from the end of your humerus.

There are also many PD Astronomy programs available, *Tour of the Solar System* being the most accessible. There are plenty of well-drawn pictures too, with notes on the planets, their moons and so on.

LANGUAGES

Franglais introduces basic French words and numerals in a delightful and refreshing way. Many may not approve of the mix of French and English but it is a fun way to learn – “ici une program, pressez une key, s'il vous plait, et regardez what vous can learn. Une, deux, trois, go!”

Chunnel is a good multi-level vocabulary tester with a one or two player option. Questions are given in either French or English and you must select answers from a choice of four.

Espagnol is a good Spanish tutor/tester and comes with 37 linked verb and vocabulary lessons. The screen display is simple and a little boring, but *Espagnol* is a substantial program.

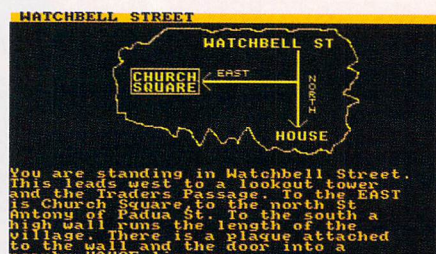
ST Dictionary is a wide-ranging vocabulary tester suitable for students of German. It isn't much to look at, but translates in both directions – from English into German and vice versa.

GEOGRAPHY

Geography Quiz is initially encouraging, with 100 questions to test children's knowledge of capitals and flags. This sounds okay but little thought has gone into the screen presentation. It's impossible to identify the flags when you can't even recognise the colours!

World Capitals is a tiny program which simply tests children's knowledge of capitals. Unlike most tiny PD programs though this one actually works, and works well!

Geography Tutor – Europe is a vast database of information on every country in Europe. You can present this info either in numer-



■ **The Search for historical clues is an excellent sequel to The History File**

ical form or over-ly it on one of the superb maps. Tutor also has exceptionally good tests.

HISTORY

History File is one of the most substantial pieces of educational software available anywhere. You take on the role of detective – searching various sources for information and building up a picture of past events. Collect information from surviving and modern sources on disk one and go back in time and interview suspects as well as check contemporary records on disk two. Finally check the validity of historical research methods using the database on disk three. Eventually, you can build up a complete picture of a nineteenth century Scottish murder.

The Search is based in Kent and you must check out various sources for information. This program contains a database which you can call up at any time.

GENERAL KNOWLEDGE

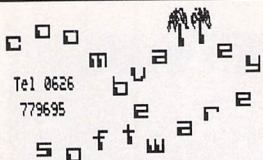
There are dozens of quiz and general knowledge programs available in the Public Domain. These are dubiously called educational programs by some PD libraries. Six of the least awful are listed here.

Three are based on pub snooker or slot machine games. A Question of Snooker and Give Us A Break are frustrating rubbish. Make A Break is much better. This contains a large database of interesting general knowledge questions.

The remaining three “straight” quiz programs let you edit existing questions as well as produce completely new files. This is useful because many of the programs test you on highly specialist material – in Trivia and Quizz



■ **Geography Tutor is a massive and complex program, full of facts and figures**



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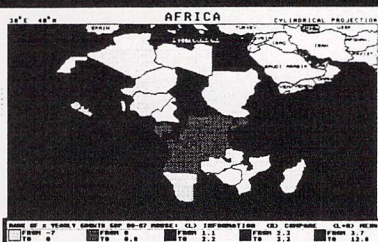
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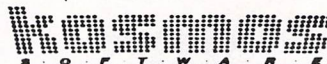
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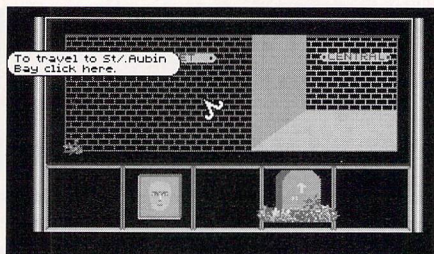
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■ Say what you like, but **Treasure Hunt** was never the same after Anneka left!

for example, you must answer exceptionally obscure questions. *The Quiz Construction Kit* is the best of the bunch with sampled speech and background music.

WORD GAMES

There are several poorly presented versions of *Hangman*. One version, *Disk EDUC32* from the PDQ PD Library, stands out though and is fun to use. You can even edit the words if you have a word processor that generates ASCII files. *Word Puzzle Generator* is the best of the word games, enabling you to create word grids from your own lists. You can use these to play word search games either on the screen or from a printout.

LOGIC GAMES

The only programs worth considering are *Decoder*, a reasonable version of the board game *Mastermind*, and *Pyramido*, an interesting and challenging variation of dominoes.

MISCELLANEOUS

Finally, there are those programs which do not readily fit into any category. We reviewed *Fun Face*, the excellent identikit program, and *Treasure Search*, a co-ordinates program, last month but they are equally good for young teenagers to play with. *Quickdraw* is a poor version of *Pictionary*, and *Hassle Court* an odd text-only adventure. *Treasure Hunt* is an average program based on the popular Channel 4 TV series. It not only includes facts about the history and geography of Jersey but also has some rather devious puzzles.

ST Logo is a fully working version of a graphics programming language soon to be taught to all children under the National Curriculum. *Typing Tutor* on the other hand is one of the best keyboard trainers available and has plenty of tests and exciting games – you won't tire of this one. **stf**

■ Next month, we're rounding off our PD edsoft survey with a miscellaneous mixture of highly specialised programs, various educational utilities such as electronic mark books, registers, study organisers and various emulators. Finally, we bring you up to date on all the most recent PD edsoft. Don't miss it!



■ **Typing Tutor** includes numerous tests and exercises to help you learn to type

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Number Go Round	****	7-13 BSoft – K14; Floppyshop – GAM78C; Goodman – GD805 Pdom – A101; ST Club – EDD10
Number Maze	****	7-13 BSoft – K14; Goodman – GD805; Pdom – A101
Shipwreck	*****	7-12 Goodmans – EDU8; STOS PD – SPD27
STOS Maths Test	****	7-11 ST Club – EDD5; Goodmans – EDU6
Understanding Algebra	*****	14+ Page 6 – ST298; Floppyshop – EDU2; SW Software – 835
Understanding Geometry	****	13+ Page 6 – ST298; Floppyshop – EDU2 SW Software – 835
Understanding Proportions	*****	13+ Page 6 – ST298; Floppyshop – EDU2 SW Software – 835
Understanding Trigonometry	*****	14+ Page 6 – ST298; Floppyshop – EDU2 SW Software – 835

SCIENCE SUBJECTS

The Body Shop	****	11+ Page 6 – ST295
Chemistry	****	12+ Floppyshop – EDU9
Elements	****	13+ SW Software – 433
Tour of the Solar System	*****	11+ Alpha PD

LANGUAGES

Chunnel	****	10+ Goodmans – EDU9; Page 6 – ST299
Espagnol	****	13+ ST Club – EDU13
Franglais	****	8+ Floppyshop – EDU9
ST Dictionary (German)	****	11+ P Dom – G35

GEOGRAPHY

Geography Quiz	**	10+ PDQ – EDUC31
Geography Tutor: Europe	*****	12+ Page 6 – ST242
World	*	10+ Floppyshop – EDU7M
World Capitals	****	9+ SW Software – 641

HISTORY

History File (3 Disks)	*****	13+ ST Club P Dom; Page 6 LAPD
Search (The)	*****	13+ Page 6 – ST296

GENERAL KNOWLEDGE

A Question of Snooker	**	12+ Floppyshop – GAM112C
Give Us A Break	**	12+ STOS PD – SPD12
Make a Break	*****	12+ Page 6 – ST184
Quiz Construction Kit	*****	9+ Goodmans – EDU10
Quizz	***	9+ ST Club – ST163; Floppy Shop – GAM44C; SW Software – 433 PDQ – EDUC32; Trivia SS 9+ PDQ – EDUC31

WORD GAMES

Hangman	*	9+ ST Club – EDD5
Hangman	***	8+ ST Club – EDD8
Hangman	****	8+ PDQ – EDUC32
Word Puzzle Generator	*****	9+ Page 6 – ST198

"LOGIC" GAMES

Alphafit	*	8+ ST Club – EDD10
Decoder	***	8+ PDQ – EDUC31
Fuzzball	**	7+ B Soft – K15
Pyramido	****	10+ PDQ – EDUC38; Strikes S 10+ PDQ – EDUC31 ST Tac Toe S 7+ ST Club – EDD7, EDD8; Page 6 – ST197; Floppyshop – GAM78C

MISCELLANEOUS

Fun Face Demo	*****	8-14 B Soft – K16
Hassle Court	**	11+ SW Software
Quickdraw	**	7-14 Page 6 – ST197
ST Logo	****	9+ Alpha PD
Treasure Hunt (Jersey)	****	10+ Page 6 – ST297
Treasure Search	*****	7-12 Pdom – G76; STOS PD – DPD15
Typing Tutor (STOS)	*****	11+ Page 6 – ST247; STOS PD – SPD17

KEY

*	Avoid if possible
**	Of little educational value.
***	Maybe, maybe not.
****	Educationally sound.
*****	Excellent!

WHERE TO GET YOUR PD EDSOFT

You can obtain all the software mentioned above from the following PD libraries. If you want any more information about PD software, see our comprehensive PD library directory on page 129.

Alpha Computing, 32 Meadow Drive, Wheatley, Halifax, West Yorkshire HX3 5JZ ☎ 0422 366785
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Page 6 Publishing, PO Box 54, Stafford ST16 1DR ☎ 0785 213928

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South West Software Library, PO Box 562, Wimbourne, Dorset BH21 2YD

ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX

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Feedback

Write to: *Feedback, ST FORMAT, 30 Monmouth Street, Bath BA1 2BW*

It's a fair cop

I am writing to complain about your Hard Drive competition in the March issue. After buying the magazine on Thursday 14 February, I was disgusted to find that the competition closing date was twice stated as Friday 15 February.

This made it impossible for me to enter the competition despite the fact that I bought the magazine on the day it arrived in the shops. What is the point of a competition if it is impossible to enter it?

D Hastings
Salisbury, Wilts

stf Okay, okay, we'll come quietly, *guv'nor*. The date printed in last issue's Hard Drive competition was an error. To give you all a chance to get your entries in, we're extending the deadline to Friday 19 April.

Advertise your assets

Piracy is clearly benefitting some software users in the short-term, but at the expense of the programmers in the long-term. The call to stamp out piracy, however, is unlikely to resolve the problem to the satisfaction of all concerned.

A simple solution could be found, using advertising – one or two minutes of advertising on the loading screen need distract the player no more than the average commercial. All software would have to take into account advertisement space. Commercial TV makes a profit without any charge for their entertainment services – similarly, software prices could be substantially reduced, making pirating hardly worthwhile. How many pirate videos of *Coronation Street* are in illegal circulation, for example? Assuming this solution is acceptable to all parties, we should end up with contented programmers and contented software users.

Steve Thomas
Caerphilly, Mid Glamorgan

stf Steve, your argument seems confused. The reason no-one pirates copies of *Coronation Street* is because you watch it once or twice and then forget about it. Piracy is rife among some game-players because you can spend a night round your mate's house playing *Sim City* and still want to get hold of a copy for yourself. This suggests that advertising would be more successful in a game than on television, but the latter reaches an audience of 25 million whereas most games would be lucky to be seen by 10,000 gamers at most. Of course, adding an advert into a game would be a nightmare in itself. A good advert would need sampled sound and animation and all of this uses valuable disk space.

Even if software publishers were to take up the idea of using advertising in their games, can you imagine what we'd be seeing in intro

STRAIGHT TO THE POINT

■ Could you please do a review of *Mastersound 2* – I am interested in buying it. Could you also recommend a second IBM drive for under £100.

N J Martin
Rochester, Kent

– In next month's spondacious issue we'll be doing a full review of three new music samplers and one of these just happens to be Microdeal's new Mastersound 2.

Regarding your query about a second drive, any drive will do because there's no need to ensure IBM compatibility. If you're looking for a 5.25-inch drive, consult this month's special Buyer's Guide supplement to find out what's available.

■ Please could you tell me what kinds of robots are available for the STE, where I can get them from and how much they cost.

Clive Gray
Sharrow, Sheffield
– Silica (☎ 071 309 1111) sell Robokit at just over £100 which may be just what you're after. Robokit is a special cartridge that enables you to interface your ST with the outside world. By combining Robokit with a Lego set and following the tutorials contained within the Robokit manual, you can build yourself all manner of weird and wonderful creations. Of course whether they'll ever get around to doing the shopping for you is another matter.

■ In a previous issue you did an article on classic arcade games. Could you please tell me where to obtain such arcade classics as *Asteroids* and *Centipede*?

Ian Lamb
Wootton Bassett, Wilts
– The people you need to talk to are Digita (☎ 0395 270273), who write conversions of many of the most popular arcade hits.

sequences and between levels? An *Andrex* puppy dashing across the screen with half a loo roll tied round his waist? Or worse, a woman digitised so badly that she looks like someone set her face on fire and put it out with a rake, advertising a kinky chatline?

A crook by any other name

I will not give my name because I have been forced to become a software pirate. I bought a game from Imageworks just over three months ago for £19.95, I tried to load it up, but it didn't load. I then read the instructions again and it said "single-sided drive owners send in your disk to be upgraded." I did this but haven't heard anything from them since.

I think waiting three months for a reply is too long, and I feel ripped off. I have written to them more than three times but have still heard

nothing. I have always been against software piracy. I know how to copy games but until now I have only made backups for myself. Now I will copy every Imageworks game and give copies to my friends and their friends because this company has ripped me off.

Anonymous
Darlington, County Durham

stf There is absolutely no excuse for pirating software. It is people like you who perpetuate software piracy and who are hurting not only software houses, but also other game-players. Deprive a software house of money to invest in future game development and publishers are forced to churn out more poor quality software which we eventually end up buying.

You try to justify your argument by saying Imageworks never responded to your problem. If that's the case then give them a ring (☎ 071 928 1454) and explain your position, but don't use it as an excuse to go on a thieving rampage. If you trot along to the bank and their servicetill gobbles up your card, do you then dig a secret tunnel into their vault and walk off with everyone's money? Perhaps you do if you're missing a few brain cells...

Get your ting in a twast

As regards your leader "Any more jargon?" (STF 19), I have indeed spotted some of that which may be described as "jargon." The said items may be located at one's leisure on the eleventh page. Under the leader "Colour digitising software for ST," there are two words which stray from the bounds of one's Oxford Dictionary. These specific words may be described as unusual in the extreme since they appear to have little or nothing to do with the functioning of one's digitising utensil – indeed their apparent usage seems to be a little unclear to my colleague, the "Rev Thomas James Hartlet," and me, since the only apparent meanings arise from shooting terns and one's "G & T."

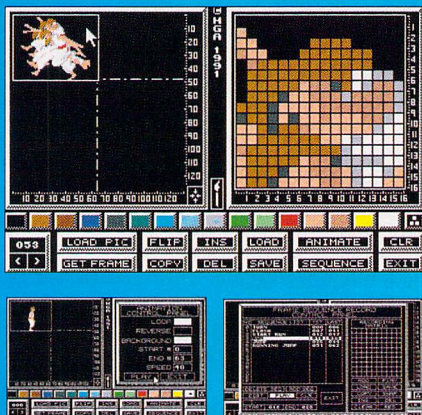
Hence the word "youfire," which one's colleague and one's self believe to have originated from the noble sport of fowl shooting, where one's "ammo" has expired and hence one is unable to shoot one's remaining airborne fowl. This is the point at which one calls out to one's partner, "youfire!"

"Itfis" appears to be derived from the clubhouse after one's golf or other recreational activity, where one's acquaintances and one's self have over-indulged in alcohol and one is in an uncertain state – it is at this point that the barman may ask one to describe one's "G & T," at which point one may describe it by using the term "itfis" (it fizzes). At such a stage, one will almost certainly be pronounced intoxicated. However, I am totally unable to find a computer

■ Turn to page 153 for more letters...

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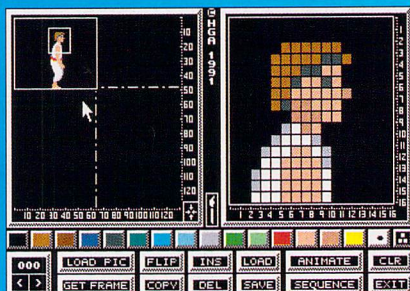
You can create your own characters in *Animaster*, load in backdrops and then make your characters run, leap or die over the top of them. Save your sequences to disk and then merge them together to build up a short cartoon. Follow this month's *GFA Basic* guide on page 37 and you can even use them in your own programs.

The demo on this issue's Cover Disk, stunning though it is, offers just a taster of what you can do. Besides being able to save your sequences, the full version of *Animaster* enables you to create and edit your sprites within *Animaster* itself, using an extensive range of drawing tools. You can then go on to construct a full-blown animation sequence using a special recording mode.

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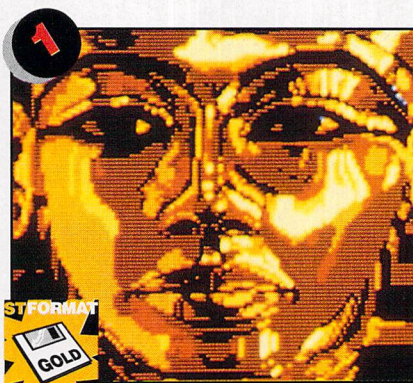
Remember, *Animaster* is available exclusively through **ST FORMAT**



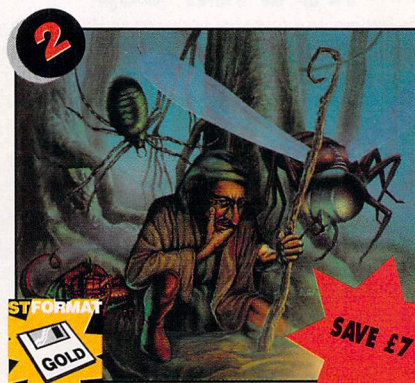
■ The sprites illustrated are from *Prince of Persia* and are not included in the *Animaster* program

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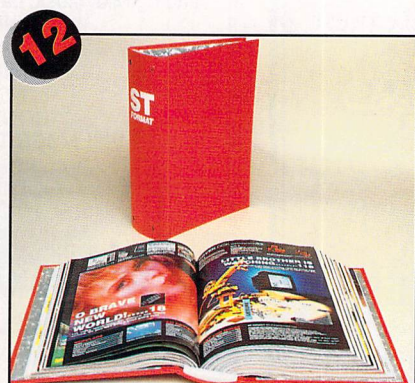
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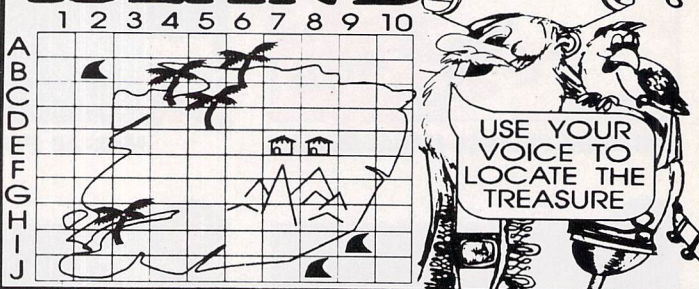
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related connection and hope that you would be so kind as to supply one.

**Brigadier General R N R P Snider,
Commander TA**

stf Ah. Yes. Well. The computer-related connection is this: some unidentifiable gremlin in our software inexplicably substituted the "fi" character for the apostrophe we typed in – but only after the page had left our hands. Nobody around here seems to understand how, but we bet it wouldn't have happened if we used only STs instead of having to rely on M*cs.

Single-sided pain

Why do we live under the oppression of single-sided drives? I own a 520ST with a double-sided drive and it infuriates me that whenever I buy a game, I must spend two thirds of my time changing and swopping between disks. Why do games come on two single-sided disks when all the data could easily fit on one double-sided disk? The percentage of ST owners who now own a single-sided drive is so small that even if they did buy the software, they could surely obtain single-sided disks from the company for free. This would be more convenient for the company as well as the customers.

**James Ford
Taunton, Somerset**

stf The difficult aspect of this dilemma would be proving to the software houses that there are so few single sided drive owners out there. And how would you feel if you had to send off for disks after you'd bought the game?

Lost your Keys?

On 31 January 1991, I ordered a compilation pack entitled *Soccer Mania* from Key Software after seeing their advertisement in STF 19. I sent off the cheque for the correct amount and reassured my son that it wouldn't be long before the game would arrive. Three weeks later and we're still waiting for the software.

My cheque was cashed by Key Software on 7 February and even after I telephoned twice (leaving my number on both occasions) I still didn't hear a thing from them.

If Key Software can advertise in a reputable magazine, I assume that they can offer an equally reputable service as well. Because I have not yet received a letter of apology or any indication as to the whereabouts of the software or my money, I am considering taking legal action and exercising my rights as a consumer.

**David Hume
Edinburgh**

stf We have received several letters about Key Software – but unfortunately they appear to be one of several companies who are just not satisfying customers. If you have any queries about Key Software, write to: Division Officer, Trading Standards Department, Gwynedd County Council, Shire Hall, Llangefni, Anglesey, Gwynedd LL77 7TW, or ☎ 0248 750262, extension 250 or 257. For general advice on your rights, take a look at the special mail order feature in the Buyer's Guide supplement, free with this issue of ST FORMAT. **stf**

■ Send your non-technical letters to **FEED-BACK, ST FORMAT**, 30 Monmouth Street, Bath BA1 2BW. For all your techie problems, send your letters to **DESKTOP** at the same address

WHO ARE YOU KIDDING, ATARI?

stf Some more comments about our special report on Atari 1990 (issue 19)

Everything you said about Atari's attitude in STF 19 is sadly borne out by Bob Gleadow's glib and evasive reply. Only one of your points is directly addressed and the letter could be

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roughly paraphrased as, "we're not sorry and it's nothing to do with us anyway."

If somebody would just have the decency to admit that some problems were unintentional – screwing up the DMA chip or shipping incompatible programs with the STE for example – it would go a long way towards easing relations with a frustrated public.

Of course, they won't promise not to do it again, because that would mean admitting it had happened in the first place. What Atari fail to realise is that such an admission would be beneficial, and would actually improve their image. Nobody has confidence in any organisation (or government, come to that) that insists everything is fine all the time. Life isn't like that, and if you try to pretend it is, you end up making absurd excuses to cover yourself, such as Bob Gleadow's assertion that Atari has never claimed compatibility with third party supplied hard drives.

This incident was because of a fault in the original chip, for heaven's sake. It has nothing to do with the third parties except that they're kept in the dark about it because of Atari's paranoia. Atari are as dependant as anyone else in the industry on third party suppliers (for printers, monitors, floppy disks, software, and so on), but unlike everyone else they seem reluctant to acknowledge that fact.

**James Pickett
Newport, Isle of Wight**

After what must be fifteen years of reading letters in computer magazines, this is the first time I've ever felt the need to respond to one. I refer to Mr Marigliano's letter in last issue's *Feedback*. What a load of crap!

He certainly doesn't fall into the category of the rational reader he talks about. The whole point of "belly-aching" about the STE is to warn first-time buyers of what to expect. Far more importantly, it's meant to prevent current "serious" ST owners making the easy mistake of upgrading to an STE before Atari can get it right and sort out the situation.

New owners at the moment would be advised to get an STFM if they intend to use it for anything other than playing games. Okay, I admit the Save Desktop bug is a minor niggle, but how many months have passed by without the fault being fixed in the new machines that are now being manufactured? I know it can be expensive, but companies in other unrelated fields recall faulty goods and fix problems. Why can't Atari?

No-one could blame Atari for having a go at game programmers who "don't stick to the rules," but it's a different kettle of fish if Atari change the rules and then say the rules have not been strictly adhered to. Come on, Atari, doesn't the floppy drive controller chip work differently now?

Concerning the DMA problem, Mr Marigliano is lucky with his hard drive. Others are not so fortunate. Imagine that Joe Bloggs buys a Vauxford Escavaliar car and has no

problems. He decides to buy a caravan and narrows it down to two Escavaliar specific models – Vauxford's own heavy and expensive one, or the Acme Ace which is better designed, cheaper and lighter, and enables him to go that little bit faster.

Naturally, he buys the Acme Ace and enjoys miles of happy motoring. A new Vauxford Escavaliar is announced with enhanced features, so he sells his old one and buys the new one. Joe's new Escavaliar works fine, but once he gets going, he can't stop because the brakes don't work when you hook a caravan up to it. He has an accident, his caravan overturns and he loses everything in it. Vauxford announce there are no problems.

Does the motor press carry on and say nothing, just because some people don't have caravans? No, it goes out of its way to highlight the problem. This forces Vauxford to call in all their vehicles and fix the problem. Vauxford even now admit there is a problem, and say a modification can be carried out. But when Joe sends his Escavaliar back to Vauxford, he finds his caravan won't even start, let alone stop! On contacting Vauxford, he's told that only Vauxford caravans are eligible for modification – it certainly isn't applicable to other manufacturers' models.

This is exactly what happened to me with my STE. Can you imagine what would happen if Ford took this attitude with their customers and their cars? I rang the manufacturers of my Supra hard drive in the United States, and they told me that they would love to make my drives work, but they don't know how. Supra tell me that Atari won't tell them the rules. I don't think Atari really know the rules! If they do, I think it's about time they made the information available before Atari's supporting companies throw in the towel.

In the future it could be a case of "hook up any peripheral you like, as long as it's made by Atari." I am told that some STEs work okay. Does that make mine faulty and eligible for replacement? Atari say no.

Finally, let me say for myself and everyone I know, that *ST FORMAT* is by far the best ST magazine in the market – in part, this is because you kick ass when it's deserved. Anyone wanting a magazine which doesn't spell out the truth should go and buy one of the other inferior ST magazines. More power to your word processors!

**Barrie J Capel
Crew, Cheshire**

stf Atari are seriously annoying ST owners with this ridiculous hard drive bug, although they still insist that it affects only a tiny fraction of STEs on sale. The bug has been fixed, but to cover themselves, Atari only guarantee that the STE will work with their own hard drives, which unfortunately means you don't have much of a leg to stand on if you can't get your hard drive to work – although most manufacturers should refund your money if your drive is new.

With Atari poised to drop the price of the STE (see the news story on page 7), perhaps they realise they need to pull their finger out and do something right for a change. I wonder whether sales of the soon to be launched Mega STE will be hampered by the DMA chip saga. After all, the new machine is aimed at the "serious" user, but what businessman in his right mind would invest in a computer which corrupts hard drive data?

Twilight Zone



■ I don't know, the things some people do to get their face into a magazine. After spending years throwing popcorn at Philip Schofield every Saturday morning, newshound Andy Hutchinson swaps his rompsuit for the chance to audition for *Going Live!* They would have given him the job too but his nose kept battering the camera every time he turned round

What a bloomin' cheek...

This month's "What a bloomin' cheek" award goes to someone who sent in a two-line letter, written in finger crayon size lettering, saying: "I heard about your magazine *ST FORMAT* from a friend. I would be grateful if you could send me a sample copy."

Yes, well, no doubt you would. We don't know if you've noticed, but newsagents do a nice line in magazines, and you can find *ST FORMAT* in one of these establishments. I

mean, come on, do you write off to Andrex for a sample toilet roll each time they bring out a new, "soft, strong and very long" colour? Or to Ferrari for a complimentary Testarossa whenever they announce a new model?

If you want a quality magazine like *FORMAT*, you've simply got to buy it – unless you're a shoplifter of course, in which case you could do five years for it instead. **stf**

Time to win, or have won

Yes, we know you spotted our little pre-April-fool jokette last issue. Our Power hard drive competition gave the closing date as Friday 15 February, though the issue only went on sale on the 14th. To give all of you time to get your answers to us, we're extending the deadline for the competition to Friday 19 April.

And speaking of competitions, let's have a big hand for the winner of our Humongous Ocean Comp, Mark Paul Maguire of Market Drayton in Shropshire, who'll be getting every *ST game Ocean* release for the next five years, in addition to the crammed box already in the mail, full of all Ocean's current games.

NEXT MONTH

Our next storming issue hits the shelves on Thursday 11 April, featuring a special look at how to make DTP work for you. There's comprehensive advice from the pros, explaining how you can create sophisticated reports, magazines, letters, using the vast range of DTP programs available for the ST. And since you need to write your letters and documents first, there's also a huge round-up of ST word processors, new and old.

But that's not all! Other highlights include:

■ On next month's Cover Disk we're giving away a song written by professional composer Neil Palmer.

Inside the issue he'll be talking about how he put the track together and offering advice on what to do with your musical masterpieces!

■ We've followed the progress of Millennium's futuristic sports game *Stormball* over the last three issues, and next month there's a playable demo of the game on our Cover Disk – plus a full review.

■ Lost data to a virulent virus? Found your FAT table crunched by a furtive ST? Discovered the gremlins have raided your disk box? Next month we have a full tutorial on how to repair your disks and recover all that missing data.

Plus, there's the usual huge assortment of tips, news, features and reviews – don't miss it!

Can't get hold of us?

Recently we've been receiving calls from readers who are having difficulty getting hold of *ST FORMAT*. It seems that in Wigan, for instance, there wasn't a copy of our last issue to be found within a week after its release. So here's the *FORMAT* guide to making certain you never suffer those "I can't get hold of the latest issue" blues again.

If your local newsagent doesn't have a copy of *FORMAT* on the shelf, try asking someone wearing a brown coat and standing behind the counter, "excuse me, but do you have any more copies of *ST FORMAT*?" Sometimes, even if they've sold out on the shelves, they'll have more copies in the storeroom. If that doesn't work, check one of the

bigger newsagents such as WH Smith or John Menzies.

If you don't want to subscribe – and see page 142 for some good reasons why you should – fill in the form below and hand it to your newsagent, saying, "Mr/Ms Newsagent, I'd like you to have this." Remember, every single newsagent in the country – from WH Smith to the corner shop – will be delighted to reserve you a copy each month. If you're really daring, why not ask to have it delivered to your home?

Finally, if you still have no luck, call Kate Hodges on 0225 442244 and tell her which of Future's magazines you're after and where you've tried to get hold of it. She'll sort the problem out for you in no time!

Complete this form and hand it to your newsagent

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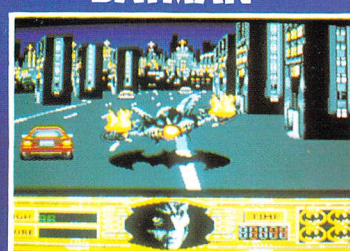
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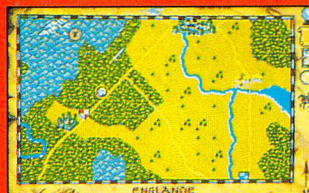
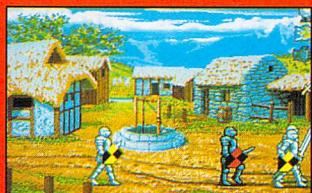
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